THE OIL WEEKLY

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The Oil Man's Calendar

JULY 12-13	Seventeenth International Geological Congress, Moscow, U.S.S.R. Interstate Oil Compact Commission, Santa Fe, New Mexico.
AUG. 10-15	Third Michigan Oil & Gas Assn., Mt. Pleasant.
SEPT. 15-17	National Petroleum Association, Hotel Traymore, Atlantic City, New Jersey.
16-19	Pacific Oil Show & Black Gold Festival, Taft, California.
SEPT. 27 OCT. 1	American Gas Association, Cleveland, Ohio.
OCT. 11-16	Oil-World Exposition, Houston, Texas.
14-16	American Association of Petroleum Geologists, Mid-Year Meeting Pittsburgh, Pennsylvania.
14-16	Independent Petroleum Association of America, Houston, Texas.
18-22	American Welding Society, Atlantic City, New Jersey.
21-22	Michigan Petroleum Association, Traverse City, Michigan.
29-30	Mid-Continent Oil and Gas Association-Texas Division, Dallas, Texas.
NOV. 8-12	American Petroleum Institute, (Annual), Chicago, Illinois.

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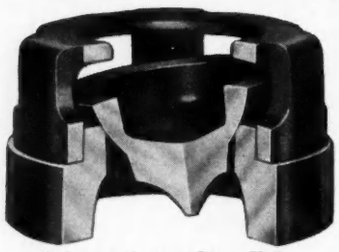

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LOOKING AHEAD

WITH THE EDITOR

Illinois Developments Important.
Drilling Problems Interesting.
Adjacent Territory Possibilities.

DURING the past year Illinois has come into much prominence because of the big leasing play. This interest was increased many fold the past several months, when three new fields were discovered. It appears that the state may be destined to occupy an increasingly important position in the United States oil industry. Major companies have been attracted to the district, and vast amounts of acreage have been leased.

What is the significance of the gig play, and of recent developemnts in the Illinois Basin is a question being asked by many. The July 5 issue of THE OIL WEEKLY will be devoted particularly to answering this question.

The issue will contain several articles on the territory. One will discuss recent developments and their significance. Did you know that data from new wells permit the construction of a revised contour map, and confirm earlier predictions that structural irregularities exist in the deeper part of the basin? They do, and a map showing the location of the three new fields this year, and the revised contours will be published. Prospects for development of important new production in the state have never appeared brighter.

With the area assured to see more drilling than in the past, many are interested in the problems that are encountered. This is the subject of another article.

Another important article will discuss the oil and gas possibilities of an adjacent area. It is the result of a geophysical survey made of northeast Arkansas, the western portions of Tennessee and Kentucky. The article carries a large two-color insert map.

The purpose of the articles are to review developments in the region, to consider the geologic significance of new data, their bearing on the future course of the industry, to present operating problems, and to study the adjacent territory to the southwest.

A feature of the Illinois play has been that the three new fields discovered this year are the first tests in the state to ever be located with geophysical instruments, clearly indicating apparently the value of this type of work in the territory, and making it likely that these instruments are apt to soon be used extensively in nearby regions.

THIS WEEK

Most of the recent pipe line construction has consisted of short lines from producing fields to previously existing trunk lines, like this one at Anahuac, which is being enlarged to accommodate the pool's larger output. A vast system of transportation has been built in the United States. More than 115,000 miles are in existence, and are the subject for an engineering symposium beginning on page 32 of this issue.

ACCORDING to the Bureau of Mines regular monthly estimate, 57,000 more barrels of crude will be needed during July than in June. This would raise the daily average production to 3,423,800 barrels, which is 453,500 barrels higher than a year ago. However, crude production recently has actually been averaging above the Bureau's recommendation. **Page 24.**

THE Texas Railroad Commission has set a July state allowable of 1,385,476 barrels, which is closer to the Bureau of Mines recommendations than it has been adhering recently. This output would be 22,086 barrels less than that allowed on June 17, but is 35,214 barrels more than on June 1. However, it is but 10,376 barrels above the bureau consumer demand estimate. **Page 25.**

A COMMITTEE of Kansas producers has recommended to the Corporation Commission that the state adopt a composite decline curve for determining well potentials. Some producers object to the practice of frequent potentials because of the expense and asserted damage to wells. Others protest the practice of using special pumping equipment for increasing the potential. A minimum well allowable in keeping with well depths is urged by the majority report of the committee. **Page 24.**

THE Oklahoma Corporation Commission last week set an allowable of 629,700 barrels daily for July, which is the same as the Bureau of Mines recommended for the state. This is an increase of 4400 barrels over the June figure. In Louisiana the result was different. That state increased its allowed output 9200 barrels to 263,850 barrels, which was 10,850 barrels above the Bureau of Mines. **Page 26.**

THE United States attorney general last week told the House Naval Affairs that oil lands in Naval Reserve No. 1, now in possession of Standard Oil Company of California, cannot be reclaimed by the government. Legislation enacted years ago and the lapse of time have permanenty deprived the government of any chance of recovery. **Page 92.**

CURRENT SITUATION

(Latest Available Weekly Data)

Outlook.—Favorable despite unsettled gasoline market.

Crude Market.—Continues firm.

Refined Oil Markets. — Gasoline tank car prices sagging.

Crude Production.—Up 9000 to 3,516,350 barrels.

Crude Runs to Stills.—Down 70,000 barrels daily.

Crude Stocks.—Down 24,000 barrels to 307,199,000.

Gasoline Stocks.—Down 422,000 barrels.

Gas and Fuel Oil Stocks.—Up 1,057,000 barrels.

Drilling.—Completions last week 616, down 1.

See* MARKET SECTION *for Details

REPEAL of the present depletion allowance for oil and gas wells, which is 27½ percent of the gross income at present, would cause the elimination of many small operators and investors according to Congressional members from oil producing states. The Treasury Department is seeking a reduction of the depletion as a part of its tax evasion elimination program. **Page 27.**

ALL differences of opinion in connection with Texas well spacing regulations are expected to be settled in a case soon to be heard by the State Supreme Court. In the past conflicting rulings have been handed down, and likewise there have been different thoughts on their meaning. The Supreme Court now promises to clarify all these. **Page 27.**

THE outstanding advancement in pipe line operating practice during the past year probably has been the increased ability to crowd more barrels through a line. Another development of importance has been progress in handling of different crudes in the same system. **Page 56.**

MAINTENANCE of pipe line plunger pumps is an important operation if lost time is to be kept to a minimum and upkeep costs at low levels. **Page 39.**

THERE has been much progress in pipe line joint construction the past year. Outstanding has been increased speed of making connections and several new methods of procedure. Likewise, joint strength has been improved materially. **Page 44.**

July Demand Up

BUREAU SEES THE NEED FOR 3,423,800 BARRELS PER DAY

Washington.—A daily average production of 3,423,800 barrels of crude oil will be required to meet demand in July, it was forecast June 22 by the Bureau of Mines.

This will be an increase of 57,800 barrels over the figure forecast for June and will be 453,500 barrels higher than the actual daily production in July, 1936.

It was pointed out by the bureau that crude production during the five weeks from May 1 to June 5 averaged about 3,562,000 barrels a day, and that during that period stocks of crude increased 3,974,000 barrels net, of which 4,127,000 barrels was in domestic grades, indicating a daily domestic demand over the five weeks of 3,444,000 barrels.

Domestic demand for motor fuel during the coming month is estimated by the bureau at 52,300,000 barrels, or 12 percent above the actual demand in July of last year.

"In addition to the long-time upward trend in gasoline consumption per motor vehicle," it was explained, "this gain over the previous year reflects an increasing spread between the number of motor vehicles in use during the winter months and the number in use during the summer months. The estimated number of motor vehicles in use on July 1, 1935, exceeded those in use January 1, 1935, by 1,155,000 (5 percent), this difference in 1936 was 1,300,000 (5.3 percent), and in 1937 it will be about 1,500,000 (5.9 percent)."

Probable exports of motor fuel in July are placed at 2,800,000 barrels, or 200,000 barrels higher than the June estimate.

Expect Stock Decline

Stocks of finished and unfinished gasoline amounted to 80,667,000 barrels on April 30, last, it was pointed out. According to the American Petroleum Institute, gasoline stocks were reduced about 2,450,000 barrels during May, which would place them at 78,217,000 barrels as of May 31. The bureau's estimated reduction in June, which, it was said, is indicated at present will be realized, would bring the figure to 74,267,000 barrels on June 30, compared with 67,377,000 barrels on the same date a year ago. The bureau estimates that the industry will draw on these stocks to the extent of 5,300,000 barrels during the coming month.

Benzol, direct sales, and losses of natural gasoline have been estimated at 1,100,000 barrels.

The estimated necessary production of gasoline, accordingly, is 48,700,000 barrels, which the bureau has apportioned among the several districts as follows: East Coast, 6,990,000 barrels; Appalachian, 1,720,000 barrels; Indiana-Illinois, 8,390,000 barrels; Oklahoma, 3,200,000 barrels; Kansas-Missouri, 3,020,000 barrels; Inland Texas, 3,920,000 barrels; Texas Gulf, 11,220,000 barrels; Louisiana Gulf, 1,630,000 barrels; Inland Louisiana-Arkansas, 980,000 barrels; Rocky Mountain, 1,120,000 barrels; California, 6,510,000 barrels.

Consumption of natural gasoline at refineries is estimated at 5.7 percent of the total gasoline required, or 2,780,000 barrels; the yield of straight-run and cracked gasoline is calculated at 45.49 percent, which, when applied to the estimated straight-run and cracked gasoline production of 45,920,000 barrels, gives refinery requirements as 100,940,000 barrels, a record daily average of 3,256,000 barrels. "This throughput probably approximates effective refinery capacity," the bureau commented, "hence to meet the record demand it seems probable that the relatively high yield (45.49 percent) and the relatively large withdrawal from gasoline stocks (5,300,000 barrels) will occur."

Runs to stills of foreign crude have been abnormally low during the early months of the current year, primarily because of labor troubles in Venezuela, it was pointed out. These troubles now have been adjusted and foreign crude runs will probably return to normal. Accordingly, the bureau estimates that foreign crude to be charged to stills during July will approximate 2,900,000 barrels, an increase of 300,000 barrels over the estimate for June.

Exports of Crude

Exports of crude have been estimated at 5,200,000 barrels, an increase of 550,000 barrels over the current month, and crude oil burned as fuel and losses are placed at 2,900,000 barrels, 100,000 barrels under the June estimate.

The bureau's allocation of production among the states provides for an increase in daily output for every state except New Mexico, where a 1200 barrel drop is forecast, and Indiana, which is left unchanged. The allocation by states is as follows:

Daily Average in Barrels

State	Forecast July, 1937	Forecast June, 1937
Texas	1,375,100	1,354,000
Oklahoma	629,700	625,300
California	605,500	585,900
Louisiana	253,000	252,000
Kansas	195,600	190,700
New Mexico	100,800	102,000
Pennsylvania	53,700	52,400
Wyoming	52,900	51,000
Michigan	39,800	38,400
Arkansas	28,400	28,300
Montana	16,200	15,400
Kentucky	16,100	15,700
New York	15,600	14,700
Illinois	13,000	12,800
West Virginia	10,700	9,700
Ohio	10,700	10,600
Colorado	4,700	4,800
Indiana	2,300	2,300
	3,423,800	3,366,000

The amounts in this table have been calculated as the requirements for the months stated and are not intended to be calculations of daily average demand for the current year or for any period other than the months stated.

Kanas Proration

COMPOSITE DECLINE CURVE POTENTIAL METHOD WANTED

Wichita.—Adoption of a composite decline curve for determining well potentials will come before the Kansas corporation commission as a majority report of a committee of producers. A minority report will recommend the taking of physical tests each six months.

Announcement of the taking of testimony for the determination of new potential rules was made by E. E. Blencoe, commission chairman, June 19, following a conference with E. G. Dahlgren, who becomes director of proration July 1, T. A. Morgan, the retiring director, and A. S. Ritchie, chairman of the committee of producers, whose two reports will be but part of the testimony taken.

Changes Demanded

Demand for changes in methods of determining potentials started several months back. Some producers objected to the practice of frequent potential tests because of the expense and damage to some wells. Special pumping equipment has been allowed for taking potentials, with other equipment installed for actual production. Even this would be illegal under the suggestions of the minority.

The first suggestion of the majority report is that minimum well allowables be adopted in keeping with well depths —15 barrels per day for wells less than 2000 feet deep; 25 barrels per day for wells from 2000 to 4000 feet deep; 35 barrels per day for wells from 4000 to 6000 feet deep; 50 barrels per day for wells deeper than 6000 feet. Average depth of wells in a common source of supply would determine classification.

Some May Not Be Prorated

For pools with average well output of 50 barrels per day or less, the majority report recommends that each have a 30-day potential test for the purpose of determining whether the pool should be eliminated from proration.

This report recommends an initial potential test on all wells, retaining the existing restrictions as to tubing, size of working barrel, and length of stroke, after which potentials "shall be determined by using a composite withdrawal decline curve based on actual history of potential declines and withdrawals."

Under the majority recommendation

no well would be given a potential exceeding 2500 barrels per day, since "2500 barrels per day is in excess of the theoretical volume of dead oil that can be pumped with present restricted pumping equipment, using a reasonable number of strokes per minute (around 36)."

Wells that show higher than 2500 barrels potential could be retested each six months, if desired, until such time as they show 2500 barrels, after which they would be placed on the decline curve at the proper point.

Adjustment Each Three Months

Adjustment to the composite decline curve would be required each three months.

Owners of wells of less than 2500 barrels would be allowed to petition the commission for permission to deepen or plug back and would be required to notify owners of offset leases at the time of filing petition. Protests could be filed within 10 days. After deepening or plugging back and finding production, potential would be reestablished by an initial production test.

Initial potential gauges in all instances would be for eight hours, gauging the tanks each hour with the last four hours multiplied by six to determine potential.

Temporary potentials would be allowed until permanent equipment has been installed, after which actual potential would be taken and the well placed on the decline curve at the proper point.

Minority Wants Physical Tests

Physical production potential tests would be required under recommendations of the minority report. These, however, would be taken each six months and with the equipment used in producing the well. Pumping tests with reciprocating pumps could not exceed 3-inch tubing or stroke of 54 inches. No swabbing potential tests would be permitted.

For fields with potential in excess of 300 barrels daily, potential test would extend 12 hours; fields with well averages between 75 and 300 barrels per day would be tested for 24 hours; in fields with well averages of less than 75 barrels per day, the potential test would be continued for 48 hours. The 24-hour potential would be determined by calculating on this basis.

All wells on potential test would be required to take initial test; take a 60-day retest; take periodic six-month tests. Results would be in effect for the full six months.

Another minority recommendation is that a lease, having adequate pipe line outlet, and failing to make its allowable for two months in succession, either accept a reduced potential to the average of the last month or take a new potential under rules applying to the pool.

For flowing wells the recommendation is that the test extend for 14 hours and that output of the first two hours be ignored in determining capacity for 24 hours.

All offset lease owners would be notified and have the privilege of gauging potentials by the hour. Before a potential test could be accepted by the commission at least one offset producer should verify the opening and closing tank gauges.

Texas Output

JULY ALLOWABLE SET CLOSER TO BUREAU RECOMMENDATION

Austin.—The July Texas oil proration order set by the Railroad Commission calls for an allowable of 1,385,476 barrels daily beginning July 1. This is 22,086 barrels less than the allowable of the state on June 17, and is 35,214 barrels more than the allowance on June 1. The figure is 10,376 barrels above the consumer demand estimate for the state by the United States Bureau of Mines, which is closer to the latter's recommendations than Texas has been running.

The accompanying table shows the allowables by districts for June 1, June 17, and July 1.

The substantial "granted" increases, as differentiated from increases due to new completions, included 3000 barrels to Van, a higher allowable for Placedo, Flour Bluff, Dickinson, and Gillock.

Chairman C. V. Terrell said that of the amount cut, about half was a result of checking under-production as reflected in May reports from operators, and cutting allowables in those fields back to actual production; and the other half by equalizing allowable production between fields and districts.

Many Fields Increased

Increases of more than 100 barrels were given the following fields: Cayuga increased 939 barrels to 8120 barrels; Long Lake, allowed 1350 barrels, up 213; Rodessa, up 980 barrels to 36,048; Sulphur Bluff, increased 373 barrels to 3995 barrels; Talco, up to 27,428, an increase of 1703 barrels; Van, allowed 34,110 barrels, up 3000 barrels; Trinity, increased 207 barrels to 1187 barrels; North Cowden, up 853 barrels to 8094; Foster, up to 1824 barrels, an increase of 316 barrels; Goldsmith, allowed 7467 barrels, an increase of 1847 barrels; Gulf-McElroy, up 223 barrels to 3796 barrels; Howard Glasscock, increased 184 barrels to 15,890 barerls; Iatan East Howard, allowed 6738 barrels, up 179; Kermit, up 1144 barrels to 19,856; Masterson, increased 647 barrels, up to 1275 barrels; Scarborough, allowed 1974 barrels, an increase of 155 barrels; Shipley, up 190 barrels to 1890 barrels; Slaughter, allowed 150 barrels as a new field; South Ward, up to 16,166 barrels, an increase of 511 barrels; Yates, increased 109 barrels to 25,275 barrels; South Jack, up 600 barrels to 9600 barrels; Jones County allowed 6850 barrels, an increase of 1050 barrels; Shackelford, up 200 barrels to 8200 barrels; McCamey, increased 578 barrels to 12,100 barrels; Batesville, allowed 100 barrels as a new field; Buchanan, increased 107 barrels to 282 barrels; Ezell, allowed 100 barrels as a new field; Thrall, up to 4782 barrels, an increase of 182 barrels; Heyser, increased 674 barrels to 3980 barrels; Placedo, allowed 8643, up 1897; Pettus, up 138 barrels to 1154; Tom O'Connor, increased 1560 barrels to 11,800 barrels; Alta Verde, a new field, allowed 100 barrels; Aransas, up 735 barrels to 1875 barrels; East Bruni, increased 441 barrels to 525 barrels; Conoco Driscoll, allowed 1137 barrels, an increase of 717 barrels; Flour Bluff, up 672 barrels to 4320 barrels; Guerra, increased 145 barrels to 596 barrels; Killam, allowed 450 barrels, up 368 barrels; Labbe, up 121 barrels to 149 barrels; LaBlanca, increased 101 barrels to 207 barrels; Loma Novia allowed 16,641 barrels, an increase of 165 barrels; Lopez, up 170 barrels to 8256 barrels; O'Hern, allowed 5304 barrels, up 232 barrels; Piedro Lumbre, increased 100 barrels to 860 barrels; Seven Sisters South, up 110 barrels to 180 barrels; Old Saxet, increased 257 barrels to 2194 barrels; New Deep Saxet, allowed 4078 barrels, up 273 barrels; New Shallow Saxet, increased 1246 barrels up to 10,632 barrels; New Frio Saxet, up to 15,449, an increase of 1206 barrels; North Sweden allowed 350 barrels, an increase of 273 barrels; Taft, up 159 barrels to 3525 barrels; Amelia, allowed 2191 barrels, up 1344 barrels; Bay City, increased 144 barrels to 1760 barrels; Boling, up 213 barrels to 1822; Cotton Lake South, allowed 375 barrels, up 175

Comparison of Texas Allowables on June 1, June 17 and July 1

DISTRICT	ALLOWABLES			DIFFERENCES	
	June 1	June 17	July 1	June 1 July 1	June 17 July 1
1 —Southwest	27,553	28,998	27,456	—97	—1,540
2 —Southwest	49,747	53,001	53,620	3,873	619
3 —Gulf Coast	186,275	197,201	193,201	7,016	—3,910
4 —Southwest	136,367	151,694	140,897	4,530	—10,797
5 —East Central	40,060	40,478	43,328	3,248	2,850
6 —East Central	36,209	42,572	39,273	3,064	—3,269
Rodessa	35,068	36,048	36,048	980	Unchanged
East Texas	462,000	465,033	466,000	4,000	967
7 —West Central	44,199	46,646	46,010	1,811	—656
7c—West Central	21,261	21,906	21,838	577	—68
8 —West Texas	172,492	181,892	177,040	4,548	—4,852
9 —North Texas	61,000	62,646	61,675	675	—971
10 —Panhandle	78,031	79,447	79,000	969	—447
	1,350,262	1,407,562	1,385,476	....	.....

NOTE: Figures in "difference columns" represent increase except where the minus (—) sign is used.

barrels; Dickinson increased 733 barrels to 3087 barrels; Gillock, allowed 1649 barrels, an increase of 294; Goose Creek, up 132 barrels to 2553 barrels; Hamman, increased 161 barrels to 336 barrels; High Island allowed 3720 barrels, up 640 barrels; New Hankamer, increased 112 barrels to 417 barrels; Old Hull, allowed 2030 barrels, up 449; New Hull, up 197 barrels to 3684; Joe's Lake, a new field, allowed 200 barrels; Lochridge, increased 148 barrels to 532; Markham, allowed 1397 barrels, an increase of 118 barrels; Nome, up 279 barrels to 1653 barrels; Port Neches, increased 379 barrels up to 1300 barrels; Segno, allowed 1375 barrels, an increase of 692 barrels; Silsbee, increased 175 barrels to 1092 barrels; South Houston, up 129 barrels to 5313 barrels; Tomball, allowed 8562 barrels, an increase of 202 barrels; Withers, increased 155 barrels to 1461 barrels; West Beaumont, up 293 barrels to 771 barrels.

The following fields were cut more than 100 barrels: Conroe, decreased 244 barrels to 39,207 barrels; Cotton Lake, allowed 500 barrels, a decrease of 108 barrels; New Mykawa, down 149 barrels to 1463 barrels; Old Ocean, decreased 106 barrels to 717 barrels; Pierce Junction, cut 388 barrels to 3133 barrels; South Liberty, down 124 barrels to 584 barrels; Jacobs, decreased 156 barrels to 612 barrels; Noack, allowed 249 barrels, a decrease of 108 barrels; Luling Stanyon, cut 122 barrels to 8577 barrels; Ray, decreased 145 barrels to 1045 barrels; Tuleta, down 137 barrels, to 640 barrels; Clara Driscoll, allowed 815 barrels, down 104 barrels; Corpus Christi, cut 1201 barrels to 8349 barrels; Haynes (Comitas), down 742 barrels to 1125 barrels; North Government Wells, decreased 194 barrels to 9582; South Government Wells, cut 160 barrels to 5004; Premont Prospect, allowed 929, a cut of 363 barrels; Crane Cowden, down 149 barrels to 1998; Estes, cut 240 barrels to 7650 barrels; Fuhrmans, decreased 134 barrels to 798 barrels; Keystone, down 334 barrels to 2476; Means, cut 243 barrels to 1995 barrels; North Ward, decreased 1333 barrels to 6895 barrels.

Allowable Is Set

629,700 BARRELS IS FIXED AS PROPER FIGURE FOR OKLAHOMA

Oklahoma City.—Orders to control proration in Oklahoma for the next six months will come largely out of agreements between producers, whose conferences with the Oklahoma Corporation Commission resulted in recommendations that are to be adopted. The commission had a docket of four days for oil propositions this week and ended it June 25 by adopting 629,700 barrels daily as the proper output for Oklahoma in July.

Monthly declines rather than physical tests were adopted for the six months. For Greater Seminole only Keokuk Falls, to be declined one percent per month, and Olympic, to be declined three percent per month, remain under restrictions. Potentials of wells of Class B rating are effective July 1.

Class C Starts August 1

Class C pools, where potentials become effective August 1, will be declined three percent per month for the period. This class includes most of the recent flush fields. The Billings Wilcox zone was transferred from this class to Class C, and it will be declined one percent per month.

While the conference was in progress a petition was filed by which the Moore pool would be placed under the control of bottom hole pressure to determine its output. Stanolind Oil & Gas Company and Amerada Petroleum Corporation filed the petition in which they asked that a reasonable gas oil ratio be determined for the pool, that all wells be declined 25 percent from existing potentials, bottom hole pressure taken for each well and determined, after which each well would get a potential in keeping with its relation to this average bottom hole pressure. The bottom hole pressure of each well would be taken monthly to determine allowable.

The decline in bottom hole pressure at Moore was cited as reason for the petition. In June, 1935, the field had a bottom hole pressure of 2837 pounds. It is now 1877 pounds. During the last 90 days the drop has been at the rate of 6.8 pounds daily. Estimated recovery for the field was given as 20,800,000 barrels, of which 1,655,900 have been recovered.

Five Percent Decline for Oklahoma City

The Wilcox zone at Oklahoma City will take a five percent decline in potential, and its output will hold around 128,000 barrels daily.

In fixing the July allowable at 629,700 barrels daily the commission laid stress on the necessity for keeping within the figure, which matches recommendations from the United States Bureau of Mines. The figures is an increase of 4400 barrels daily over the June allowable. Field output, however, has been around 640,000 barrels.

The increase was accomplished by giving added output to Class C. Class D and the unprorated areas with deductions for Class B and the unclassified fields. Oklahoma City Wilcox zone was left unchanged. By field divisions figures for the two months are:

	June	July
Oklahoma City Wilcox Zone	128,000	128,000
Class B fields	131,600	129,700
Class C fields	150,600	153,600
Class D fields	11,800	12,900
Unclassified but prorated	47,200	45,500
Unprorated fields	156,100	160,000
Totals	625,300	629,700

Proration has but little restriction left on Class B fields, the Greater Seminole area. The reduction of 1900 barrels was accomplished by giving an increase of 700 barrels daily to Keokuk falls and making reductions for East Little River, Olympic, Allen and Fish.

In the Class C fields the increase of 3000 barrels came about from granting that much higher output to wells in the Hunton lime at Fitts. The increase of 3900 barrels in the unprorated areas was made to give allowance for the increases in the older fields of the state.

LOUISIANA RAISES

July allowable exceeds June by 9200 barrels

Shreveport.—The daily average oil yield of Louisiana for July was fixed last week by the state department of conservation at 263,850 barrels, an increase of 9200 barrels over June and 10,850 barrels over the Bureau of Mines' recommended allowable.

Of the total, 181,350 barrels was allotted to South Louisiana and 82,500 barrels to North Louisiana.

Orders covering the individual allowables of producers at Rodessa, Lisbon, and Sligo fields during July, were immediately fixed by the Shreveport office of the department. At Rodessa, daily field allowable was set at 50,000 barrels, with acreage factor of one acre equal 4.6689 barrels and bottom hole pressure factor of one pound equals 0.0657 barrels.

The Lisbon daily average was set at 10,250 barrels, with 7688 barrels allocated to acreage and 2562 barrels to bottom-hole pressure. The area allotted to oil wells was 792.3 acres. Sligo's allowable was fixed at 1200 barrels, divided between six wells. These are only three fields in North Louisiana under individual well proration.

TAXES EXTENDED

Senate rejects proposal to limit nuisance levies

Washington.—Two years extension of the present gasoline and oil taxes was voted by the senate June 24 when it rejected an amendment proposed by the finance committee which would limit continuance of the so-called nuisance levies to one year. A two year extension was provided for in the legislation as passed by the house of representatives.

The gasoline tax is the best paying of all the nuisance taxes and is relatively easy and inexpensive of collection. For the fiscal year which ends with this month it is anticipated receipts from this levy will run around $195,000,000 and be about $25,000,000 above last year.

The tax on lubricating oil will return about $31,000,000 for the year, an increase of about $5,000,000 over the 1936 fiscal year, and that on pipe line transportation will exceed $11,000,000, showing an increase of about $1,500,000. The taxes on processing designed to cover the cost of enforcement of the Connally contraband oil act will run under $900,000 and will be about $250,000 under last year.

Union Contracts

C. I. O. SIGNS RICHFIELD HUMBLE WITH EMPLOYEES

Houston.—Two unionization actions of widely different nature took place last week in the oil industry. While a large West Coast company was signing an agreement with the C. I. O., a big South Mid-Continent firm was reaching a contract with a federation organized by its employees. Meanwhile, C. I. O. was claiming progress in its campaign to unionize oil field workers, stating that understandings have been reached with 42 Oklahoma oil concerns. Another action of considerable importance was the organization of a state-wide C. I. O. group in Texas, which under the plans would include all affiliated unions.

The C. I. O. oil union hereafter will be known as Oil Workers International Union, having changed its name from International Association of Oil Field, Gas Well and Refinery Workers at its recent convention in Kansas City.

Richfield Signs with C. I. O.

Richfield Oil Corporation announced that it had signed an agreement with the Oil Workers International Union that covered working conditions of all hourly rated employees in the production, natural gasoline, pipe line, refinery and automotive transportation departments. Employees in these departments total approximately 1500. The agreement runs for a period of one year, and thereafter until either party should desire a change.

According to J. C. Coulter, secretary of the Long Beach Local No. 128, "Many beneficial conditions were written into the agreement, including annual vacations, sick leave with pay, amicable methods of settling disputes or grievances, additional pay for overtime, hours of work conforming with those in the oil code."

Humble and Employees Agree

A contract between Humble Oil & Refining Company and the Employees Federation of the production and crude oil department was signed June 23. The federation is composed of 1117 members.

The agreement provides for a 36-hour week, time and a half for overtime, a more liberal vacation policy, and sole bargaining recognition for approximately 1300 employees in 12 oil fields in the Gulf Coast district. The contract was approved by 985 out of the 1117 members.

Oklahoma Concerns Sign

Working agreements with 42 Oklahoma oil companies have been effected by the Oil Workers International Union, and "16 others are on my desk," declared Maurice Daly, C. I. O. district representative last week. The names were not made public.

The contracts that have been signed, Daily stated, have a working rule clause providing for no less than 30-days notice which "assures sufficient time for peaceful arbitration between two groups in all but extreme cases."

ALLOW DEPLETION

"Elimination would tend to monopoly"—Sanders

Washington.—Repeal of the present depletion allowance for oil and gas wells, urged by Secretary of the Treasury Morgenthau as part of a program for elimination of tax evasion and avoidance, will mean also the elimination of small operators and small investors in the oil industry, according to membersof Congress from the producing states who are preparing to band together in opposition to the proposal.

The depletion allowance is one of the major points of the Administration's tax revision program, the present allowance of 27½ percent of the gross income from the property in the case of oil and gas wells, according to Secretary Morgenthau, resulting in a heavy loss of revenue to the Treasury. The total loss from the depletion allowances, including those to coal, sulphur and metal mine operators, runs from $50,000,000 to $100,000,000 a year, he said.

In the case of oil wells, the depletion allowance applies against the gross income, exclusive of rents and royalties, but may not be more than 50 percent of the net income of the taxpayer. This, the secretary declared in appearing before the joint Congressional committee which is investigating the tax situation, is much higher than the true depletion to which well operators are entitled.

Congressmen Present Facts

Washington representatives of various branches of the oil industry have been busy acquainting their members of Congress with what they declare are the true facts of the situation, one of which is that the repeal of the depletion provision would not increase tax revenues by the amount represented while, on the other hand, it would squeeze out many small operators who "get by" only with the benefit of the allowance.

In the case of the stripper well, it is contended, many operators do not get any benefit from the depletion allowance because of the exceedingly high operating costs and the low net income.

Texas Well Spacing

SUPREME COURT TO SETTLE ALL CONFLICTING OPINIONS

Austin.—A legal construction of Rule 37 intended to end all doubt existing in the minds of the bench and bar alike has been tacitly promised by the Texas Supreme Court.

The court this week granted a writ of error in the spacing rule case styled Magnolia vs. Railroad Commission involving a permit issued by the commission to Century Refining Company as an exception to the spacing rule.

This permit was attacked in the lower courts by Magnolia Petroleum Company, and on appeal the 3rd Court of Civil Appeals held that the permit was invalid and ordered the well plugged.

It is a fact that court constructions of "special exceptions" law have been so conflicting in recent months that trial courts have been at a loss as to how to decide them. Opinions have followed each other with such rapidity from the Court of Civil Appeals at Austin and from the Supreme Court that the trial court judges never know when they are following the law—because they don't know what the higher courts may hold on the succeeding court day.

Case To Be Yardstick

In the State's application for writ of error, a strong plea was made that the new Century case be made a yardstick and that the court's rulings end the uncertainty as to what is and what is not the law. The application was based largely upon an opinion in which Judge M. B. Blair expressed his dissent from the majority of the 3rd Court of Civil Appeals. It contended that the Civil Appeals Court erred in these particulars:

1. In holding that the promulgation of Rule 37 amounted to a finding by the Railroad Commission that wells drilled on lesser acreage would produce waste.

2. That any exception to the rule is in derogation of the general rule.

Finally, the state contends that the court committed the error in holding that the courts have the power to order a well plugged unless it be clearly shown that the operations from that well are producing wastes. The state claims that the only basis for plugging a well is showing that it is being wastefully operated. The court had ordered the well plugged on the theory that it was not authorized. In view of the granting of a writ of error which the court set down for hearing October 6, the Civil Appeals Court decided to hold an abeyance action on all pending Rule 37 cases until after the Supreme Court has spoken.

OIL companies have prospect of profitable operations in coming months, despite possible slowing down of business in other industries.

Continued Results

By L. J. LOGAN,

THE outlook for the oil industry still must be regarded as generally promising, despite the fact that the air has been charged lately with foreboding, generated by the widespread labor troubles and the indications of recent and impending leveling off of the hitherto sharply rising business trends.

Oil Situation Good

If there are circumstances today that do not augur well for the oil business, they are primarily the general circumstances that affect all business, rather than factors involving the oil industry itself and its individual position.

If business in general has before it a less successful course than in the past, the oil business likely will not be able to escape completely the adverse conditions.

But in the absence of an important set-back or recession in general industrial and commercial activity, the oil companies probably will continue for some time to experience exceptionally profitable operations.

Furthermore, if the much talked about impending business lull of the next several months materializes, the oil industry should prove less vulnerable to it than many other industries; and even if the present period should prove to be the beginning of a major recession of business, it likely would be considerable time before the oil industry would be adversely affected, because of the remarkably strong position that the industry now occupies.

Oil Inventories Low

The industries inventories of oil are the smallest for many years, and its markets consequently are unusually strong, basically. There are not hanging over the market any excess supplies of either crude or refined oils that might seriously impair the existing price structure.

Even if there should develop excessive production of crude or unwarranted operation of refineries, the industry could for some time absorb the excesses in its storage tanks and still not have much more than needed working stocks.

Opinion differs to some extent, naturally, as to how much oil is needed above the ground to maintain free movement from the well to the service station. But it is generally conceded that the present inventories are not much if any above minimum requirements, with crude stocks around 307,000,000 barrels, and with stocks of refined oils well in line with the current consumption.

Some qualified commentators say that crude stocks should not be permitted to go much above 300,000,000 barrels, but others think the total could be pushed to 325,000,000 barrels without adversely affecting the industry's position and markets.

Production Under Control

Furthermore, it is promised that the industry will continue for some time to hold this exceptionally favorable inventory position, as the new supplies of oil are being balanced closely with market demand, while a continuation of such balance is indicated at least for the next several months.

During this month particularly successful results are being achieved in balancing crude production with market demand. It is indicated that the crude stocks will be but slightly changed at the end of the month, as compared with the beginning of the month. Official figures show that in the first half of June there was only a minor addition to the crude stocks.

This success in the control of crude production in June is encouraging, following the ineffective control and heavy additions to storage in the preceding four months.

Continuation of the success is in prospect, moreover, at least until August 1, as the leading producing states contemplate further strict control in July. The conservation officials of some of those states already have prescribed allowables closely conforming with the forecasts of demand by the Bureau of Mines, and others have intimated they will take similar action. State allowables already promulgated, and comparisons of those allowables with the indicated market requirements include the following:

State	Barrels Daily in July: Bureau of Mines Forecast of Demand	State Allowable Crude Oil Production
Texas	1,375,100	1,385,476
Oklahoma	629,700	629,700
Louisiana	253,000	263,850

These allowables of Texas, Oklahoma and Louisiana indicate about the same strictness of control for July as that prevailing in June.

Kansas is expected to adhere closely if not exactly to the federal bureau's recommendation in fixing a state allowable, although the Kansas order for July had not been issued late last week.

New Mexico presumably will show about the same excess above the Bureau of Mines recommendation in July as in recent months. The state's daily allowable in June has been 12,500 barrels a day above the federal bureau's recommendation.

California Showing Excesses

California lately has been ranking as the foremost among the states exceeding the Bureau of Mines recommendations. In June the operators under their voluntary proration plan set a goal 18,000 barrels a day above the federal allocation but actually have been exceeding the indicated demand a substantially greater amount. While the forecast of de-

Successful Promised

MODERATE oil inventories and successful crude control promote favorable prices, and large volumes of business are expected this summer.

Associate Editor

mand for June was 585,900 barrels daily, actual production has been running about 75,000 barrels a day above that level. The new Wilmington field, with its flush output, has been making difficult the achievement of better results.

Refined Stocks Moderate

While the inventories of crude oil are very moderate and likely to continue so in the next several months, the inventories of refined products similarly are at economic levels.

Stocks of finished and unfinished gasoline in the United States showed a further decline of 422,000 barrels in the week ended June 19, dropping to 76,574,000 barrels. The heavy demand for gasoline has caused the industry to take out of storage 7,000,000 barrels since the stocks reached their all time peak in late March.

Gasoline Storage Justified

The inventories of 76,574,000 barrels on hand June 19 were 10.6 percent greater than those of 69,214,000 barrels held one year previously. But such an increased supply is warranted by the gain that has occurred in the demand for motor fuel. In the first four months of this year, the total domestic demand for gasoline was 11.4 percent larger than in the similar period last year. In May and June the gasoline consumption apparently was more than 10 percent greater than in those months last year, and for July the Bureau of Mines has forecast that gasoline demand will be 12 percent larger than for July last year.

The inventories of other refined oils similarly are at justified levels. Gas and fuel oil stocks, for instance, are shorter than at this time last year, while demand for those oils has been running substantially higher this year than last year. The stocks of 99,215,000 barrels June 19 compared with 104,728,000 barrels a year before.

The fuel oil market has reflected this comparatively small inventory lately in rising prices. It appears rather definitely assured that fuel oil will bring attractive prices when the heavy consumption of next fall and winter develops.

Oil Earnings Favorable

While effective balancing of supply of oil with market requirements and the desirable inventory situation have combined to make the markets stable and the prices favorable, the oil industry has been benefitting also by the amount of the demand for petroleum this year, about 11 percent higher than last year and the greatest for all time.

The oil companies thus have been receiving satisfactory prices and also have been doing record volumes of business. Those factors explain why earnings in the first half of 1937 ran probably more than 50 percent above those in 1936, and were around the levels that prevailed in 1929.

Oil Demand Large

While it is indicated that there will be a continuation, at least for several months, of the present successful balancing of production with demand, it likewise is indicated that the demand for petroleum will continue unusually heavy in the next several months.

The season of vacations, extensive motoring, and heavy consumption of gasoline now is under way, and business volumes of oil companies will be seasonally large in the next few months. Furthermore, it is indicated that the sales of petroleum products this summer and early fall will show more than the usual seasonal expansion, as recent surveys foreshadow unprecedented travel by motor and otherwise in this year's vacation period.

More automobiles are registered now than ever before, and the owners this summer apparently are disposed more than in recent years to travel during the vacations.

Business people in all lines catering to tourists are making plans for accommodating record volumes of trade. A substantial part of the expenditures of the millions of persons seeking recreation will be made at the service stations.

Gasoline Market Disturbed

So far the oil industry's markets have remained relatively stable despite the uncertainties that arose out of the reduction of gasoline prices to dealers by Standard Oil Company (Indiana), although refiners in some instances have been obliged to lower their tank car prices one eighth cent a gallon in making open market sales.

When the reduction of ½ to 1 cent a gallon to dealers became effective June 9, there was an automatic lowering of the prices realized by those refiners supplying jobbers under marginal contracts. Under such contracts, the refiner guarantees to supply the jobber at a specified margin, now usually 2 cents a gallon, under the prevailing prices to dealers.

In so far as such contracts are concerned, and they are extensively involved, the jobber has not suffered by the price revision, but the refiner has had his profit reduced. Furthermore, the situation has forced the refiner into lowering his prices, in some instances, on open market business.

Meanwhile, what the refiner has lost, the dealer has gained, as the larger margin for dealers between buying prices and retail postings so far has been maintained by the dealers, very little retail price cutting having developed.

220-MILE LINE

Atlantic plans gasoline line in eastern states

Philadelphia.—Contract for the immediate construction of 220 miles of 8-inch welded gasoline line across north central Pennsylvania and western New York has been awarded by Keystone Pipe Line Company and Buffalo Pipe Line Company, both transportation units of Atlantic Refining Company, Philadelphia. The former operates an extensive system of lines in Pennsylvania in delivering gasoline and other motor fuels from Point Breeze, near Philadelphia, to Pittsburgh, Wilkes Barre and Williamsport, with several branch units. Buffalo Pipe Line Company was recently formed to operate in New York.

Two Terminals

The authorized pipe line will extend northwest from Williamsport to Buffalo, with a branch proceeding north to Rochester. These two terminal points will enable the company to ship by barge on Lake Erie and Lake Ontario.

Construction contract is held by Thos. R. Jones and W. G. "Bill" Hanrahan, Dallas partners who operate in the Southwest as Oklahoma Contracting Corporation. Two gangs are being assembled to work north and south of the Pennsylvania-New York border, and a third gang will be added later to complete the project by November 1.

Periodical extensions and loops have been added by Keystone Pipe Line Company to its Pennsylvania system since the first units were placed in operation early in December, 1931. The original project extended northwest from Point Breeze to Montello, with branches to Mechanicsburg and Wilkes Barre. Contract was awarded last April to Ford, Bacon & Davis, Inc. to parallel the 59-mile eight-inch carrier between Point Breeze and Montello with 12-inch welded line.

FIRMS MERGE

McClanahan & Leonard lines being combined

Mt. Pleasant.—Amalgamation of the W. L. McClanahan and J. W. Leonard interests into the McClanahan-Leonard Pipe Line Company was being completed this week preparatory to beginning service July 1 to producers in the Buckeye field who have been experiencing difficulty in marketing the increased supply of crude and to serve Alma and St. Louis refineries.

Officers of the new company, which is capitalized at $500,000, are Walter L. McClanahan, Michigan wildcatter, chairman of the board; J. W. Leonard, Jr., discoverer of Crystal pool in Montcalm County, president; David Beach, former general superintendent of Pure Transportation Company, vice president, secretary and general manager; Theodore R. Russel, former field superintendent for McClanahan Pipe Line Company, general superintendent; Bernard Jones, Rowmor Corporation, treasurer, and Henry Walker, formerly with Pure, assistant treasurer and office manager.

The new company is taking over the complete system of the former Mcclanahan Pipe Line Company, with the exception of the Arenac system in the northeastern section of the state.

INTANGIBLE TAX

County tax rates and life of fields are factors

Austin.—Rates at which the various Texas counties assess property and the estimated life of various oil fields were disclosed here this week as principal factors considered by the Texas State Tax Board in increasing the intangible values of Texas oil pipe lines from around $50,000,000 to more than $80,000,000.

The importance of these factors were brought out as hearings opened before the board.

While the formuli used by the board appear to have been varied with each company, the formula applied to Atlantic Pipe Line Company probably was used in a majority of the cases.

Unusual Formula Used

Atlantic's tentative valuation was fixed by the board at $6,980,000. To arrive at this value, the board followed this general formula:

An average was struck of the values at which property generally was assessed in the various counties through which the company's lines pass. This was found to be 50 percent of the true values. The company's rendition for ad valorem tax purposes was then taken and increased to 100 percent. The net profits of the company as reported by the company was then used as a base figure and from this figure was deducted an amount equal to 8 percent of the assessed values. The remainder was capitalized at 13½ percent, which is essentially the same as the so-called "seven-year purchase plan" utilized by the Federal treasury department in determining intangibles. An amount equal to 50 percent of the result was taken as the proper intangible to certify to the various counties.

In the case of Pure Transportation Company, which has its main line out of Van and a less important line from East Texas, the principal factor was the Van reserves. Just how this factor was applied was not made clear at the hearing. However, the board consented to Pure employing as an impartial engineer R. D. Parker of Austin, who will make a survey of the reserves of the field and report back to the board.

Atlantic to Protest

Atlantic, through its attorney Chas. I. Francis, expressed willingness to accept as an intangible some figure between $2,500,000 and $3,500,000, in view of the fact that Texas courts have upheld the intangible tax law and the courts also have said that the method of arriving at intangibles is immaterial so long as the results achieve a parity between the affected tax payers.

GOVERNORS INVITED

Thompson says Compact meet most important one

Austin, Texas.—An invitation to the next meeting of the Interstate Oil Compact Commission has been sent governors of 15 oil producing states by Compact Chairman Ernest O. Thompson. The meeting will be held in Santa Fe, New Mexico, on July 12 and 13.

In letters mailed from the S.S. Normandie while Thompson was en route Paris, France, to attend the Second World Petroleum Congress, Thompson pointed out that this meeting is to be the most important which the compact has held.

To Present Bureau of Mines Survey

"The U. S. Bureau of Mines will give a complete announcement of the results of the nation-wide inventory of crude in storage above ground, and will describe the characteristics of this stored oil as to its gasoline content," Thompson said.

He pointed out that there are more than 300,000,000 barrels of crude in storage, much of which has been in tanks for several years and may have deteriorated to a point that would eliminate it as a possible source of gasoline. The bureau report will indicate the condition of the entire lot and furnish the basis for an accurate determination of the amount available for gasoline.

The total stored oil is a supply for about 100 days, assuming that the entire 300,000,000 barrels is refinable. However, should bureau tests prove that any appreciable quantity of this oil cannot be used for gasoline, then the stocks on hand would be considered much lower and may permit the production of more oil during the winter than would be allowed otherwise.

STORAGE SURVEY

Bill proposes bureau to make annual inventory

Washington.—Legislation providing for an annual survey of crude petroleum in storage was this week pending before the House committee on Mines and Mining, to which it was referred following its introduction by Representative Dempsey of New Mexico.

The bill authorizes the appropriation annually of not to exceed $24,000 to enable the Bureau of Mines "to conduct inquiries and investigations and disseminate information concerning the quantity and character of crude petroleum in storage in the United States."

The information so obtained is to be classified and arranged in such manner "as to be most useful" to the bureau, the Interstate Oil Compact Commission and other federal and state public agencies, and an annual report on the results of the investigation is to be made to Congress by the Secretary of the Interior.

The bill is designed to enable the bureau to keep up-to-date the information which it has secured through the survey of storage stocks now nearing completion, a preliminary report on which will be made public following the meeting next month of the Interstate Oil Compact Commission.

Engineering Symposium

PIPE LINE NUMBER

THE OIL WEEKLY
JUNE 28, 1937

Transportation of

TRANSPORTATION of the oil from a producing well to a point of use is still the immediate problem of an oil producer, just as it was upon the completion of the well drilled by Colonel Edwin L. Drake on the banks of Oil Creek, Pa., in 1859. Scientific development through the years has made this a problem of economics relatively easy of solution, rather than one of a means to an end, as it was in the early days. A vast system of transportation in the United States is either owned by or available to the oil industry for the handling of crude oil or its products to almost any point in the United States. Refined gasoline may be shipped from inland to coastal terminals. Gas from the Panhandle is piped to major cities in Minnesota and Illinois and used through the public service lines of those cities. Crude oil may be shipped by pipe line from the Gulf Coast to the Eastern Seaboard. Connections of pipe lines with other facilities, such as barges, railroads, and truck lines, make possible delivery of the industry's products to even remote districts.

Eras of Transportation

The transportation of oil may be roughly divided into five eras. The first real developments in production extended along Oil Creek and it was natural that this stream should be used for the transportation of the crude oil. Where wells were located along the banks of the creek, oil was loaded into barges and dugouts and floated down to the Allegheny River by a system of pond freshets developed by numerous dams originally constructed along the creek by lumber mill owners for the transportation of their lumber. When the boats and rafts were loaded, word was sent to the mill owners to open the dams. Since much of this oil was in open barges or in wooden barrels it is easy to visualize what happened when the rush of water came down the creek. The cost of such transportation ranged from two to five cents per barrel; this toll being collected by agents of the mill owners before the dams were opened.

When the developments extended back several miles from the creek the only means of transportation was the team and wagon. The result was that these wagon trains, which at one time consisted of 6,000 two-horse teams and wagons, soon churned the ground into a sea of mud, and horses often sank beyond their depth and were killed. The cost of this transportation ranged from $2.50 per barrel to $5.00 per barrel.

The first suggestion of a pipe line for transportation of crude oil was made by General G. D. Karns in 1860, but a lack of finances prevented its construction and it was not until 1865 that the first really successful pipe line was built by Samuel Van Syckel. It was constructed of two-inch wrought iron pipe and was five miles in length. Similar lines were soon under construction, and the growth of pipe lines up to 1874 was extensive.

Railroads were, of course, vitally interested in this transportation problem. The first tank cars consisted of racks of barrels mounted on flat cars. These were followed in 1865 by flat cars fitted with two vertical iron hooped round wooden tanks. In the late sixties the forerunner of the present type of tank car was introduced. It consisted of a horizontal cylindrical iron tank fitted with an expansion dome and mounted on a flat car.

While hundreds of miles of pipe lines were constructed in this first period of the industry's history the real development took place during the second era, 1874 to 1889. During this period it was demonstrated that crude oil could be pumped over the mountains. Despite great opposition by railroads and other interests, three pipe lines were built to the sea. Pumping machinery was greatly developed and the technique of pipe manufacture was improved.

Although oil was transported by boat in the sixties it was not until 1872 that a tank steamer was built for the transportation of crude oil. Improvements, have, of course, continued from that time, but they have been primarily refinements, together with an increase in size and improvement in motive power.

Of outstanding importance in the third era of transportation are the construction and successful operation of twin pipe lines carrying crude oil and kerosene long distances and over mountains from northwestern Pennsylvania to the Atlantic Seaboard and the beginning of pipe line construction in the Mid-Continent and Texas coastal areas. Some lines also were built in California. Lines were numerous and relatively short. Construction was still by hand although it was during this period that the first successful "make up" machine was developed for screwing the joints together. It is of interest to note that it was during 1902 that the first tanker was loaded and shipped from a Texas port.

Two outstanding events during the fourth era, 1904 to 1919, presaged important developments in modern pipe line transportation. The first was the introduction of welding and the second was the construction and operation of a gasoline pipe line.

Oil

By L. F. SCHERER, Assistant Chief Engineer,
Texas Pipe Line Company

Welding was by the oxy-acetylene method and was necessarily crude; however, joints made by this process proved so much stronger and freer from leaks that its use rapidly increased. It was successfully used in 1919 in the construction of the first gasoline line, extending from Salt Creek, Wyoming, to Casper, a distance of 40 miles. It was during this time that many of the largest crude oil pipe line systems were started.

Major improvements in pipe line transportation and practice, and in tanker construction and operation, have been made since 1919. Most of this exceptional progress and improvement have come during the life time of the present generation. It is with this era and the future that we are primarily interested.

The transportation of crude oil or its products may be generally divided into four classifications—transportation by trucks, by rail, by water and by pipe lines.

Transportation of Crude by Truck

There has been little incentive toward the development of truck transportation of crude oil since the early days of the horse drawn wagon. Such developments as exist have been due to the natural development of this type of transportation in general, rather than to a need of development in the industry.

The rapid development of the East Texas field did result in an undue demand for truck transportation of the crude oil. However, its continued use is for reasons other than economic.

The industry does, however, own and operate a vast fleet of trucks used primarily in the transportation of finished products. Figures compiled in 1935 show that it was credited with 130,000 trucks of which 40,000 were tank trucks.

Transportation of Crude Oil by Railroad

The railroads have had a vital interest in the transportation of oil since the early sixties when the first crude tank cars were developed and placed in service. Pipe lines were, of course, in direct competition with the railroads and had the great advantage of cheaper transportation cost. This condition resulted in a bitter warfare between the two carriers which frequently developed into open conflict and damage of properties.

Railroads are, of course, public carriers and were constructed primarily for the purpose of making profit from transportation. They carry everything not prohibited by law, in whatever direction is required, and in so doing they usually have return hauls of other products. Their interest in the oil industry therefore is only that of another source of business. Because of this the railroads have never supplied cars in adequate quantities for transportation of petroleum or its products, consequently the various units in the industry have had to purchase for themselves, or lease from others, large fleets of tank cars in order to make use of the railroad system of transportation.

So far as the transportation of crude oil is concerned the railroad's principal function is the serving of isolated fields not economically accessible to trunk lines or the shipment of relatively small shipments not readily handled in a large trunk line movement. They also frequently serve as a "stop gap" in fields with access to the railroad and whose production must be moved before adequate pipe lines can be constructed to them. A notable example of this was during the rapid development of the East Texas field.

The petroleum industry owns and operates more than 140,000 tank cars over and above what the railroad companies have been able to provide. In 1934 the railroads received nearly a quarter of a billion dollars from the oil industry—or about 10 percent of the total carload freight revenue.

The modern tank car is, of course, a far cry from its ancient ancestor. The tank itself has been much improved in design and has been fitted with more positive valves and safety devices to minimize the hazards of loading and unloading. The frames have been given special attention in regard to strengthening.

Transportation by Boat

The first movement of oil by water was in the days of Oil Creek field when barges were used to float the barreled oil down to the Allegheny River. Ocean transportation was not attempted until about sixty-five years ago when the first "tanker," a sailing ship, was put into service. It carried 7,000 barrels of crude oil in wooden casks. Wooden hulls with built-in iron tanks followed. With the advent of steam-driven steel vessels, development was rapid and our present day steel tankers, either steam or Diesel motor driven, are ideally adapted to the service. They are especially designed for this service, the steel hull being divided both longitudinally and transversely by bulkheads into a group of tanks retained by the hull. Many devices have been added to simplify handling of the product and to minimize all hazards of loading and unloading. At the present time tankers having a capacity of 140,000 barrels are in operation.

Crude oil or its products may now be shipped to almost any part of the world. On December 31, 1934, oil tank ships of 1,000 tons or over comprised 26.5 percent of America's entire sea going merchant-marine tonnage. About one sixth of the ships and one third of the tonnage which passes through the Panama Canal is made of tank ships.

Barges are, of course, used to a great extent in

such developments as in South Louisiana and for inter-coastal service. There is a great variety in their types from the ordinary steel lease barge, through those fitted with their own unloading facilities to those which are self propelling. Their principal function is the transfer of crude oil from the wells or isolated coastal fields to storage or terminals.

Transportation by Pipe Line

The modern pipe line system has often been called an underground railroad and in many respects it is similar to a railroad with its branch lines, freight yards, main lines, stations, telephone system, methods of dispatching and accounting. In one respect, however, it differs and that greatly. In a pipe line system only the freight moves, and in this lies the secret of its economic success.

Operation of a Pipe Line

In the diagram may be seen the schematic layout of a pipe line system. The crude oil produced at the wells is usually bought by a purchasing company and tendered by them to the pipe line company for delivery to the purchaser at a designated delivery point on the pipe line company's system or a connecting system. The oil is then gathered from the lease tanks either by gravity or pumped by field units through small pipes, two to six inches in diameter, to a field station which in turn delivers the oil through a gathering line or a short branch line to the main trunk system. The oil gathered is measured at each lease tank by a gauger whose duty it is to record the amount of oil taken from each lease and give a receipt. Before delivery to the main line, this quantity is again gauged and checked back against the original figures.

The main trunk system consists of one or more relatively large pipe lines, from four to twelve inches in diameter, depending upon the amount of oil to be handled through the line. Along this trunk line are located main line stations consisting of the proper capacity of Diesel, steam, motor or gas engine driven pumps of either reciprocating or centrifugal type. Stations are usually spaced at intervals of 40 miles, although this figure varies, depending upon the terrain and viscosity of the oil.

Like railroads, where several trains may be on the main line at the same time, we may have various grades of oil in the line simultaneously. This is accomplished by switching the oil in a certain storage tank into the line at a time previously designated by the dispatcher. If the oil on the upstream, or incoming side of a station, is of a different grade than that being introduced, it is, of course, switched into an empty storage tank while the dispatched oil is sent on down the line. Oil not immediately needed at the delivery point is often sidetracked while another grade in demand is pushed on down the line.

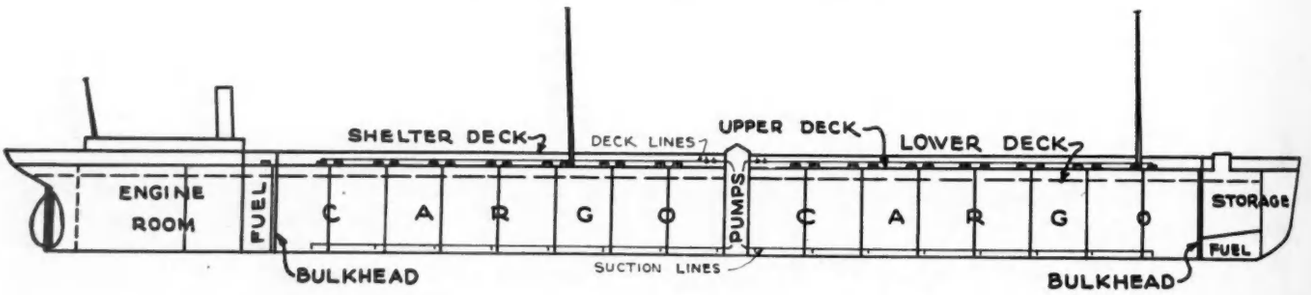
At the delivery point, or terminus, the oil is switched into previously designated tanks where it will remain in storage or until required for delivery to the refinery or other transportation facilities. It is, of course, again gauged upon receipt and the amount checked against the amount delivered in the field. The dispatcher knows the position of the oil in the line at all times and is able to switch the various grades with a minimum amount of contamination.

Telegraph or telephone connections are maintained to all stations on the system so that the traffic department or dispatcher may at all times contact the operating personnel. As a matter of fact each station is required to report receipts and pumpings as well as other pertinent data at hourly intervals.

Transportation Rates

The pipe line company charges a rate or tariff both for gathering the oil and for transporting it to the point of delivery. So many factors are involved in the establishment of these rates that it would be impractical to discuss them here. This is a unique business of one-way transportation of a diminishing commodity through a system whose business must decline as the commodity is depleted, and it therefore requires special treatment in the fixing of rates. In compliance with the "rules and regulations" and "tariff circulars" of the Interstate Commerce Commission, all pipe lines classified as Interstate Common Carriers must publish and file with the Commission tariffs showing the rates and regulations under which oil is accepted for transportation.

Longitudinal Section of an Oil Tanker



Organization

The organization of a pipe line company does not differ in any material respect from that of any other large corporation and therefore it needs no special consideration.

There is a common and widely accepted misconception regarding pipe line practice, namely, that pipe line construction and operation are simple and

involve no highly technical engineering problems. Contrary to this general belief, pipe line operation is one of the most highly technical branches of the oil industry and involves the application of practically all branches of engineering. Because of this fact the executive personnel of a pipe line company will ordinarily be found to be composed principally of technical or technically minded men.

Construction of Pipe Lines

Design: Before actual construction of a pipe line is started, complete and thorough surveys, mostly of an economic nature, must be conducted. The potential and probable average production of the field or fields to be served must be taken into consideration as well as their probable life. From this and other information an estimate may be made as to the possible revenue which may be expected. With this data and a wide personal experience it is then possible to decide upon the feasibility of constructing the line.

Having determined upon the amount of crude oil to be handled per day and knowing the characteristics of crude which will be transported, as well as the relative elevations between receiving and delivery points, it is possible to arrive at the size of the pipe line itself and to make tentative location of the stations.

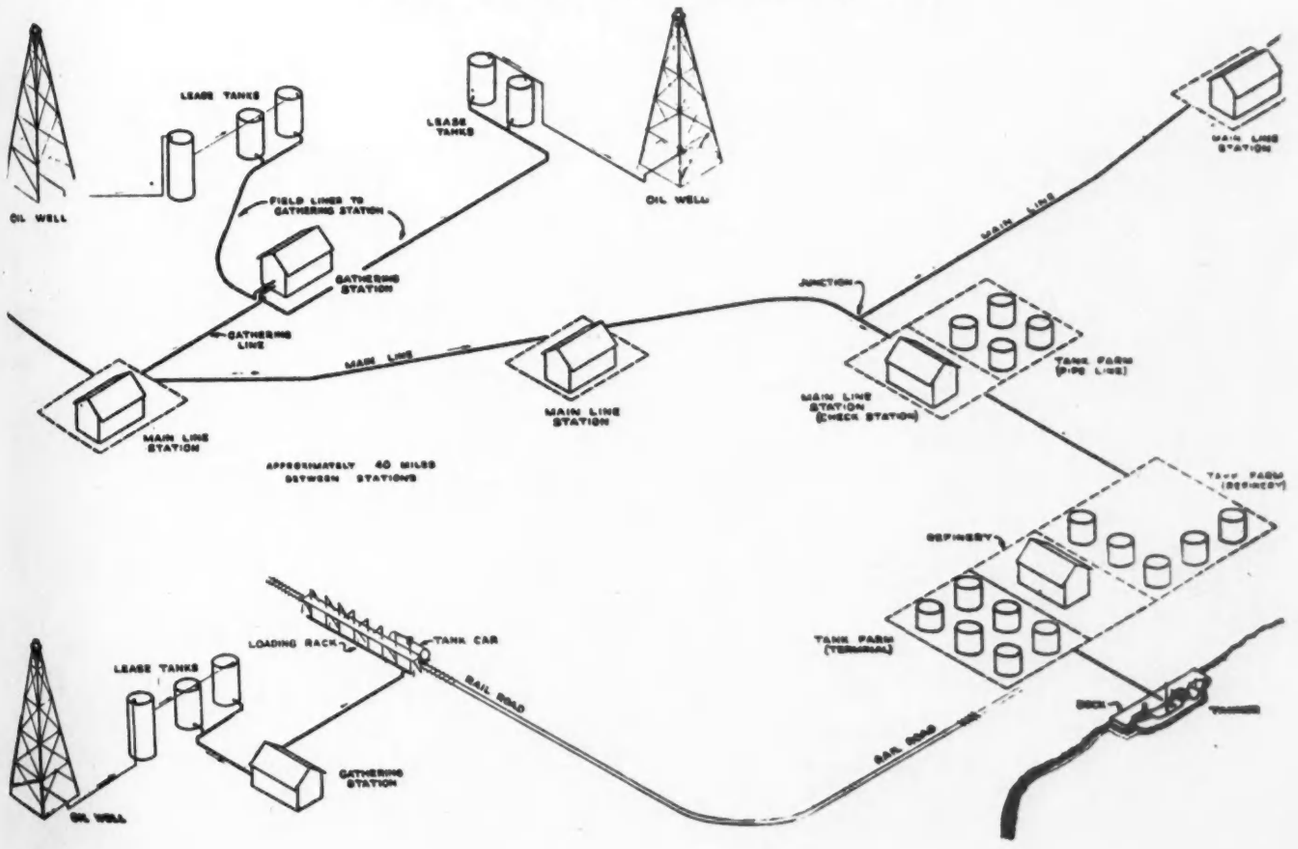
Location: A general route has, of course, already been determined upon but it now becomes necessary to more definitely locate the route to be followed. With the use of available maps and known points a preliminary survey is run. This may be revised from time to time to avoid obstructions or to take advantage of the terrain. During recent years aerial surveys have been used with most gratifying results. Through their use it is possible to definitely locate the proposed line on the ground without more than a superficial field survey.

After definite location of the line it becomes necessary to obtain right of way, consisting in most instances of an easement of a defined strip of land from 15 to 40 feet in width. This easement is made to the pipe line company by the property owner and is usually obtained by a man in the employ of the pipe line company and familiar with the procedure. Easements usually state that they are to extend for the period of use and are obtained at such widely varying costs that no figure can be given.

Construction: A major portion of the pipe lines now being constructed in this country are built by contractors specializing in this type of construction. In most cases the pipe is purchased by the pipe line company and delivered in given quantities to locations adjacent to the line under construction. Actual construction is usually started simultaneously at several points along the right of way. The pipe is strung along the right-of-way by special pipe trucks. In case of marshy or wet land this may be by tractor-type wagons and tractors. In any event, it is a mechanical operation, men being used only in the actual unloading.

Almost all main trunk lines are buried. As a general rule they are covered with from 18 to 22 inches of dirt. Until quite recent times all this ditching was

Schematic Layout of Oil Transportation Systems



done by hand; now hand ditching is resorted to only in special locations not readily accessible by modern machines. Since the location of the line has been previously staked and "flagged," it is now only necessary for the operator of the ditching machine to line up with the flags and regulate the speed of the machine and the depth of the cut by the type of earth encountered and the contour of the ground. The dirt removed is automatically piled to one side of the ditch.

Lines may be screw coupled or welded together, with latter most popular in modern oil carrying systems. Welded lines are of two general types, either electric arc or oxy-acetylene. The electric arc type is rapidly forging to the front in this service.

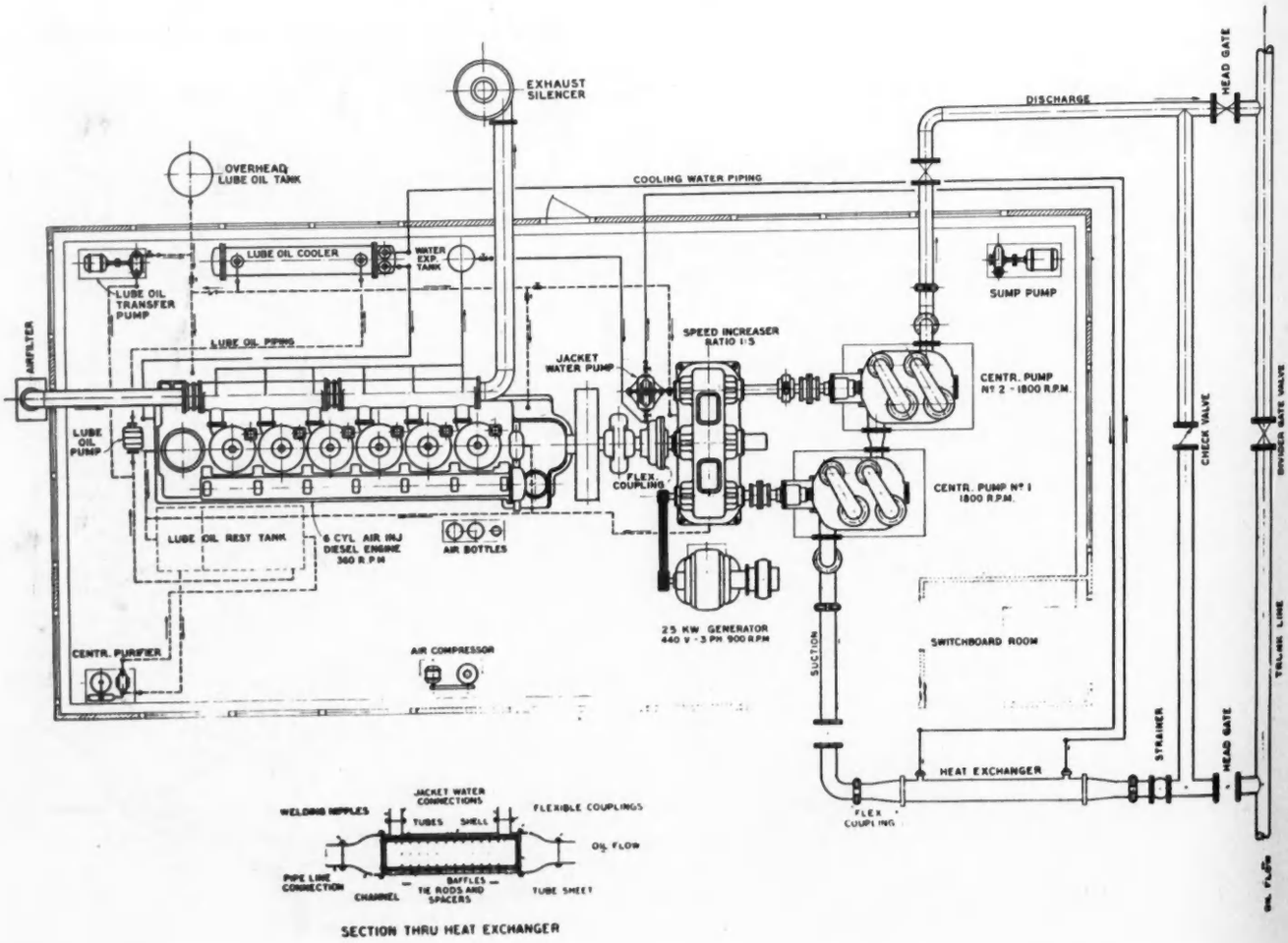
The welding crew follows the ditcher, lining up the pipe and tack welding the joints into a continuous length of from 400 to 800 feet. This length of pipe is usually mounted on portable rollers alongside the ditch and the entire section is slowly rotated while the welders complete the joints. Upon completion of these joint welds this length of pipe is joined to that already completed. All welds are inspected for flaws by company inspectors and frequent samples or "coupons" are taken out of the welds for examination and testing.

The welding crews are followed by cleaning and doping crews. The pipe is thoroughly cleaned and dried, then covered with some form of protective material usually of asphalt or coal tar base. Modern practice calls for mechanical application of a prime coat and heavy coat of the selected material applied by one of several successful automatic machines. This is followed by a wrapping machine which automatically applies a spiral wrapping of an impregnated felt or asbestos wrapper. Occasionally this is followed by another layer of coating material and a loose wrapper of impregnated paper wired in place. It is now considered good practice to specify that the coating be free of "holidays"; that is, skips or misses in the coating. These "holidays" are located by means of an electrical device consisting of a ring holding piano wire fingers against the coated surface. One side of an induction coil in the circuit is connected to the pipe, the other to the ring. Breaks in the coating close the circuit causing the vibrator on the coil to operate. The break thus located is immediately repaired.

The doping crew is followed by the lowering crew. The coated pipe is now lying on skids over the trench. A tractor fitted with a boom and sling picks up the pipe at intervals, depending upon the size of the line, the skids are removed, and the line is gradually lowered into the trench.

After lowering in place, the line is backfilled either by power operated scrapers or by tractor "bulldozers"—these latter consisting of a tractor having a scraper rigidly mounted at the forward end. The

Typical Diesel-Centrifugal Oil Pumping Station



old hand backfilling was a slow tedious process compared with the present method.

The construction of the gathering system does not differ greatly from main line construction except that smaller pipe sizes and lower pressures are usually used. The great care used in protecting the main line pipe is not so necessary in gathering lines, and frequently they are not even buried. Construction of the gathering system is usually in progress at the same time that work is proceeding on the main line.

Stations and Equipment

Engineering design has already indicated the proper location for the main line stations. These locations may be varied somewhat to suit local field conditions. A suitably sized piece of land is purchased and construction of the stations proceeds simultaneously with the line construction.

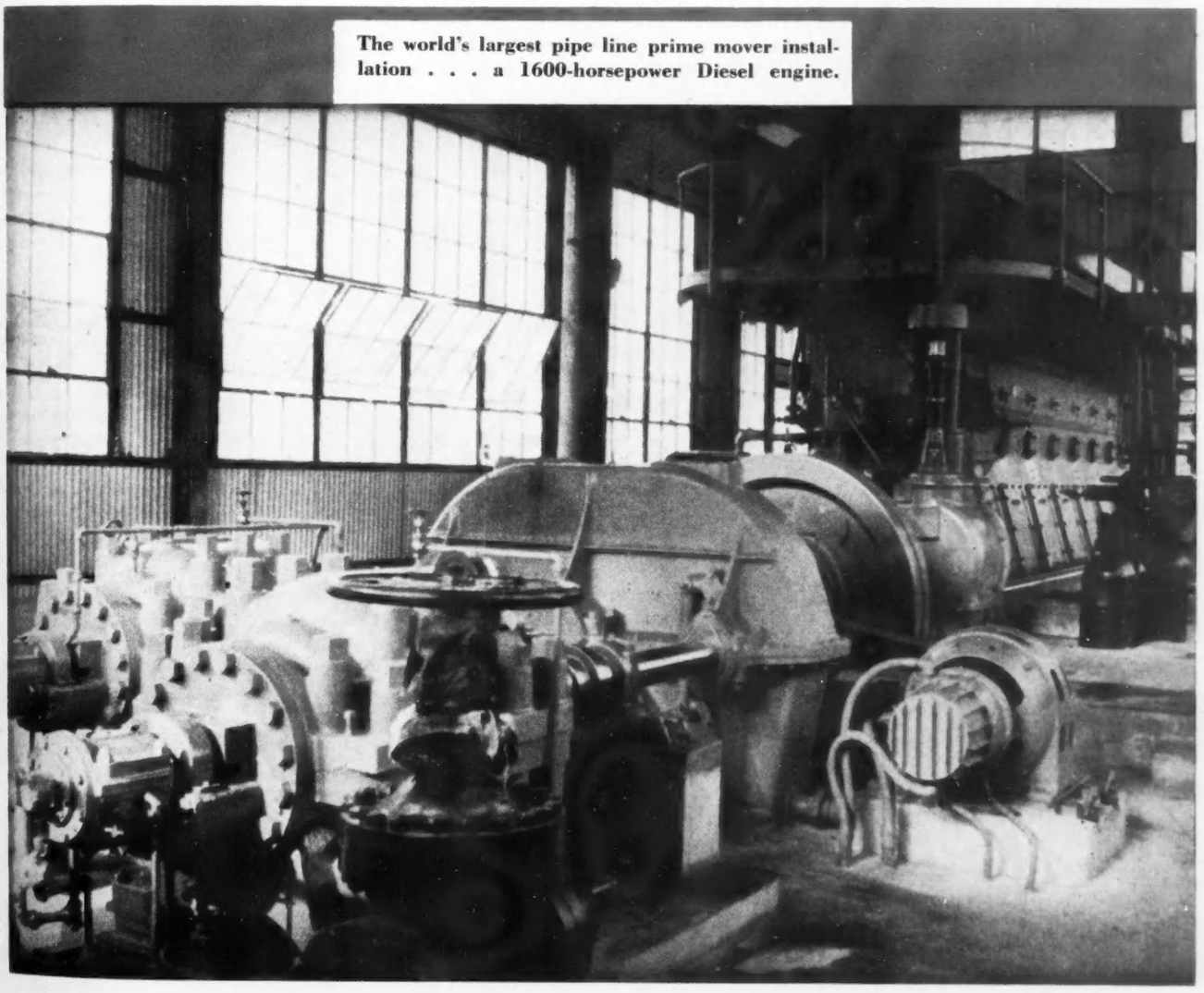
Each main line station is a complete power plant in its own right. The choice of prime mover selected depends upon many local conditions, differing in almost every case. It is a problem of engineering economics which would be a discussion in itself.

Perhaps there has been more real advance in the design of main line pump stations during the past few years than in any other phase of pipe line work. The period from 1919 until now has seen the displacement of the greater part of the steam pumping equipment, used almost exclusively until then. The development of the Diesel engine, burning crude oil taken from the line, has been the major factor in effecting this change. Its thermal efficiency, relatively low first cost and low operating cost, far offset any improvement made in steam equipment.

The extension of facilities of the great power companies, making electric power fairly accessible at reasonable rates, has been a large factor in the increased use of electric motors as prime movers of pumping equipment. While the first cost of electric pump stations is quite low and their efficiency is relatively high the power rates in many instances are often too high to permit of economical competition with Diesel power.

Within the past few years natural gas has become more plentiful and its distribution covers a greater area. Apparently anticipating this trend engine manufacturers have developed the old-type horizontal slow-speed gas engine into the compact high-speed, multi-cylinder, vertical engine, which in many cases is readily convertible to Diesel fuel. With cheap gas easily available this type of prime mover has become a potent competitor to the Diesel engine.

The development of pumps has, of course, been as rapid as that of the prime movers. The original pumps were, for the most part, slow-speed direct-acting steam pumps, very inefficient in operation. This equipment was gradually developed into the twin-compound double-acting fly-wheel pump operating condensing. This type of unit was in service up to the time that



The world's largest pipe line prime mover installation . . . a 1600-horsepower Diesel engine.

Diesel engines came into general use and was very efficient.

Recent years have seen some development in the reciprocating type of pump, but by far the greatest development has been in the centrifugal pump. Its ophave been improved tremendously. This type of pump erating pressures, head characteristics and efficiencies due to its low first cost, small space requirements and relatively low maintenance cost is rapidly receiving its due consideration as a main line unit for either gas, electric, or Diesel power.

As was previously stated a main line pump station must be a self-contained power unit. It consists primarily of one or more pumps having the capacity and head characteristics necessary to pump the oil stream on down the line. The pumps must of course be actuated by a prime mover of sufficient capacity and of a type decided upon after due consideration of local conditions.

Naturally much auxiliary equipment is required. In the case of an electric station this would probably consist of a substation, control, and lighting panels, sump and sump pump, operators' cottages and a water well with pump. In the case of a Diesel or gas station it would consist of a generator, auxiliary generator, air compressor, lube and fuel oil purifiers, sump and sump pump, water well and pump, jacket water cooling system, together with operators' cottages and in the case of a station with a tank farm, a complicated manifold or system of steam switching. The proper design of a main line station requires the application of a wide engineering knowledge practically applied.

Maintenance of Pipe Lines

Maintenance of underground facilities: As is the case with any structure or series of structures subject to obsolescence or depreciation, pipe lines either trunk or gathering, require a rather high degree of maintenance in order that operating efficiency may be maintained.

Line walkers are employed to regularly cover every foot of the pipe line right-of-way reporting all evidences of damage to the lines and where possible making immediate repairs.

Small leaks can usually be repaired by the application of a pipe clamp consisting of a cast iron or steel shoe, gasket lined, which is fitted over the leak and clamped in place by yokes fitting around the pipe. Excessive damage to the lines caused by corrosion and extending over a considerable area may call for complete reconditioning of that section of the line. In such a case repairs are effected by replacing the damaged section with new pipe, by repairing the badly pitted areas with spot welding or by a process of "half soling." This latter consists of covering the damaged areas with half sections of one sized larger pipe and welding these sections to the good portion of the original pipe.

Probably one of the most complicated problems encountered in the maintenance of pipe lines is corrosion, that most destructive of all agents to buried iron and steel. A constant battle must be waged against its influence, and almost every branch of engineering science must be called upon to solve the problems which it evolves.

Maintenance of Station and Mechanical Equipment: The problems involved in the maintenace of stations and mechanical equipment are similar to those of like equipment in other service. There is one important difference, however, and that is that the operating time or "load factor" of pipe line equipment is usually much greater than for other service and the "stand by" equipment available for use during repairs is usually limited. Because of this, a special technique and versatility are required in the repair of equipment. It also calls for a systematic and regular inspection of equipment combined with thorough and accurate operating and breakage reports.

Closure

Today the industry operates more than 115,000 miles of pipe lines, built at a cost exceeding one billion dollars. Development within the past few years has been rapid. The day of large construction programs has passed and the attention of pipe line engineers and executives is being shifted to planning for more efficient operation and ways of meeting approaching obsolescence and maintenance schedules.

The trend has been toward the greater mechanization of construction methods and we may expect to see more development in this direction. The technique of welding is being improved from day to day and we may expect semi-automatic welding of pipe joints in the not too distant future.

Higher tensile strength seamless and electrically welded, plain end pipe in 30- to 60-foot lengths and thinner walls is rapidly replacing the low carbon, lap-weld pipe of shorter length and greater unit weight in new pipe line construction. We may well expect further developments along this line.

Greater attention is being given to corrosion of underground structures and as our knowledge of the corrosive action and our practice in combatting it increases, we may expect great progress in this field of maintenance.

Every type of pumping equipment is being greatly improved upon. The old straight line steam field pumps are being replaced by modern reciprocating and rotary pumps powered by high-speed Diesel and gas engines especially designed for the service. The modern main line pumping plant is a far cry from the plants of even 10 to 15 years ago. There is a definite trend toward relatively high-speed compact units of lower first cost and lower installation costs that are still capable of maintaining a high degree of efficiency without undue increase in maintenance.

Refinements growing from scientific inventions and research will be successfully applied to all forms of transportation of crude oil and this branch of the industry, economically so important, may be expected to keep pace with all other branches of the industry in the general advance.

By ELTON STERRETT, Engineer

Maintaining Pipe Line Plunger Pumps

A MEANS of eliminating the side jump of the tail plunger, a method for improving the service of packing gland studs, a systematic procedure for checking valves and seats, and a way of prolonging pump pressure gauge life are described.

CARE and maintenance of pipe line plunger pumps, usually hard driven on a 24-hour, 7-day a week basis, becomes an important factor in main line station management if lost time is kept to a minimum and an equally sharp check is kept on upkeep costs.

Save in those rare instances where the pipe line company still adheres to the boom-time creed of "run 'er till she busts an' then buy a new un," the breakdown of any wearing part of a pump while in service is regarded more or less as a reflection on the ability of the station chief engineer and—where employed—the repair man or master mechanic.

Renewals of plunger packings must be scheduled as needed, the frequency of this chore being dependant upon the pressures carried, condition of the plungers, and type of packing used, and, most of all, watchfulness against the packing being run with more squeeze in the gland than actually necessary to hold the fluid. During service, any plunger tends to wear in a shape roughly approximating the geometrical rolling hyperboloid or greatly stretched hour-glass.

This wear, caused by friction of the packing on the plunger, and accelerated by the presence of sand in the crude being handled, is greatest at the midsection of the plunger, as there the speed of plunger through the packing is greatest. In the course of time this packing wear also leaves shoulders on the polished plungers at the ends of the travel or stroke, these irregularities tending to pound out the packing rapidly at each change of gland position with adjustment or tightening.

Where records of packing life have been kept, and pumping hours balanced against cost, the best packings are found most economical on worn plungers, the packing being used as replacement usually conforming to some modified flexible cup type which will follow the plunger contours under the influence of the pressure within the pump barrel.

Plunger Wear May Be Reduced

Regrinding of worn plungers, formerly more widely practiced to get away from the irregular cross-sections causing rapid packing abrasion, now is resorted to infrequently; it being considered more

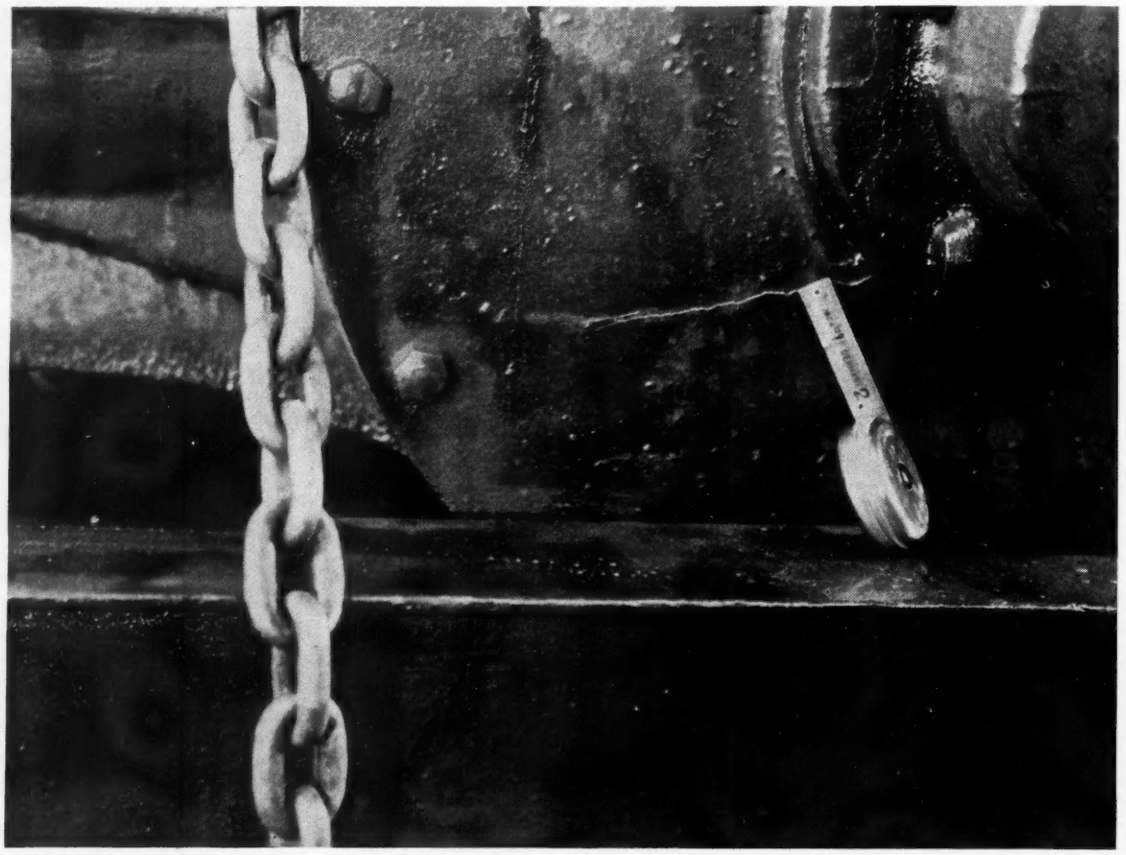


FIGURE 1

After being operated through nine years of almost continuous service at pressures within the manufacturer's recommendation, this oil pump was disabled in 1½ days service at a pressure exceeding that considered safe. Constructed to operate at 800 pounds, this unit was given pressures of 1150 pounds. The additional strain cracked the power end frame as indicated by the rule. In addition to the cost of repair parts and labor charges against the work, transportation and lost time added to the expense of using a 350-pound overload.

practical to use a packing which is self-adjusting, and which imposes the least possible friction load on the plunger.

One company has worked out a means for eliminating the side jump of the tail or outer plunger with the beginning of its working stroke. Many engineers and operators accept this as an inherent shortcoming of the side-rod type of duplex plunger pump, and do nothing about rectifying the condition.

Since this side hop or travel is not present in a new pump, it must result from uneven wear of some portion of the crank and crosshead assembly. By checking angularity of the crosshead in its guides under maximum working pressure in each direction, with an extension to multiply any deviation from straight line travel, it was found that the side throw was due to unequal wear of the wrist pin and the halves of the bearing in which it worked.

The surfaces interacting to move the plunger assembly outwardly were no longer parallel to those reversing the travel, with a consequent slight twist of the crosshead under this obliquely applied force which, multiplied by the length of the side or tie rods, jerked the outer plunger sharply to meet the changed direction of travel. Although never more than the clearance between plunger and gland, unless corrected this alternating sidewise shift results in uneven wear of both plunger and gland, also adding more packing drag to the metallic friction thus built up.

Shimming behind the bearing halves corrects this condition if the angularity be due to converging surfaces of the halves where they bear against the pin; while a slight set may be imparted to the pump connecting rod in a press if the hole carrying the pin no longer lies accurately at right angles to plunger travel and crosshead guide axes.

Aligning crosshead and plunger travel once a year by this method has been found to reduce plunger wear, increase normal packing life, and provide for operating the pumps with the same lack of vibration as when delivered by the manufacturer. In practice, unless a bearing is badly distorted, the back sides or heels of the brasses are relieved slightly, instead of introducing shims, which have a tendency to work loose.

Checking of packing gland studs is usually left to

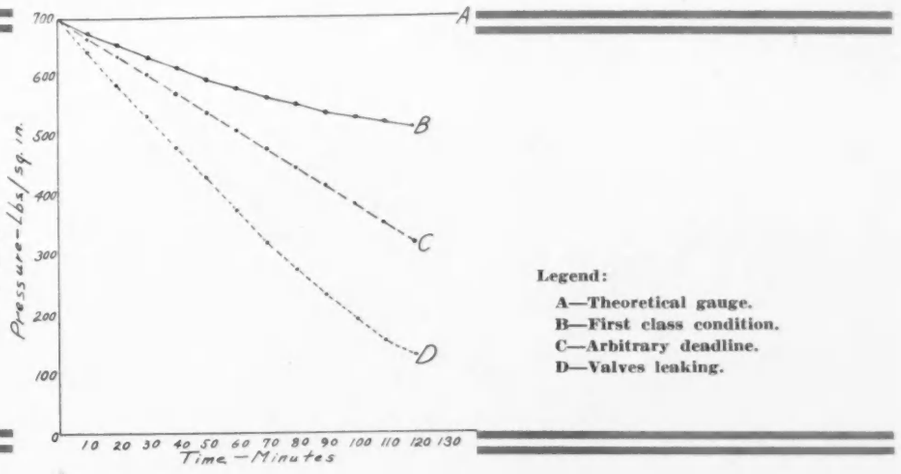


FIGURE 2

One company has adopted a systematic check of plunger pump valves and seats. Curve C is the deadline at which they are considered satisfactory.

ocular inspection, a trained eye being able, in most instances, to detect undue elongation of the stud under the alternating stress of plunger load. When such a stretch is evident, possible plunger trouble and certain packing distortion or destruction can be avoided only by immediate replacement of the overloaded or weakened stud.

One major pipe line company's station, with a record of no broken gland studs in more than one million hours of pump operation, pulls all such studs on each pump and replaces them on a set date each year. Each old stud, bearing the date of first service on its outer end, is normalized after extraction in a heating furnace. This treatment equalizes possible distortion and restores the metal to the condition at manufacture, removing entirely any grain growth due to alternating stresses.

Following the heat-treating, the stud thread is carefully checked with a gauge and the threads inspected for flaws. If the gauge fits poorly, an undersize die is run over the thread and the reconditioned stud is equipped with its quota of nuts, also tapped slightly undersize to assure a snug fit. After such a normalized stud has been used for two yearly replacements, with one heat-treatment to intervene, it is scrapped, regardless of apparent perfect condition, and a new one furnished in its place.

Valve and Seat Checking

In the checking of valves and seats against wear and leakage, the methods in vogue differ nearly as much as do the faces of the chief engineers in the various pipe line stations. Some companies specify a quarterly or semi-annual inspection of valves and seats, this involving usually only pulling of covers and inspection of the valves and their seats to determine if pits, flaws, cuts or "windrows" are visible. If not, the pump is usually put back into service without any more exact method of checking for losses being employed.

The same station that has developed the precautions enumerated in gland stud use has also worked out a systematic check of valves and seats for its plunger pumps which leaves little or nothing to chance—or the whim of the engineer.

Taking one of the 5x24-inch triplex pumps with which the station is equipped, a careful check was made of the tightness of the by-pass gate and pump relief valve. When there was absolutely no leakage through either of these, as proved by opening the lines connecting them to the pump suction, the air bottle was cut off and removed from its riser, that the oil therein might be observed to check against leakage there, and also to remove the erratic fluctuations which might be introduced were the air cushion in the bottle left in contact with the oil serving to test the pump.

Then, after reconnecting the suction lines, closing the suction gate, and being certain the suction header drain was open, line pressure of 700 pounds per square inch was admitted into the discharge side of the pump.

Pressure was then cut off, and at 10-minute intervals over a period of 2 hours the pressure within the pump was read from the pump gauge. Although the valves on this pump had been inspected by both chief engineer and master mechanic and passed as "O. K." by the pair, pressures as shown in Column "D" of Table 1, and as plotted as Curve "D" of Figure 2 were obtained.

The valve seats were then pulled and refaced, and, using the same balls as before, the pump was operated for 24 hours, and then given a second pressure test.

With the sole change of renewed seats, or refaced contacts on the old seats, the leakage was reduced materially, as shown by the pressures recorded in Column "B" of Table 1, and plotted at "B" in Figure 2.

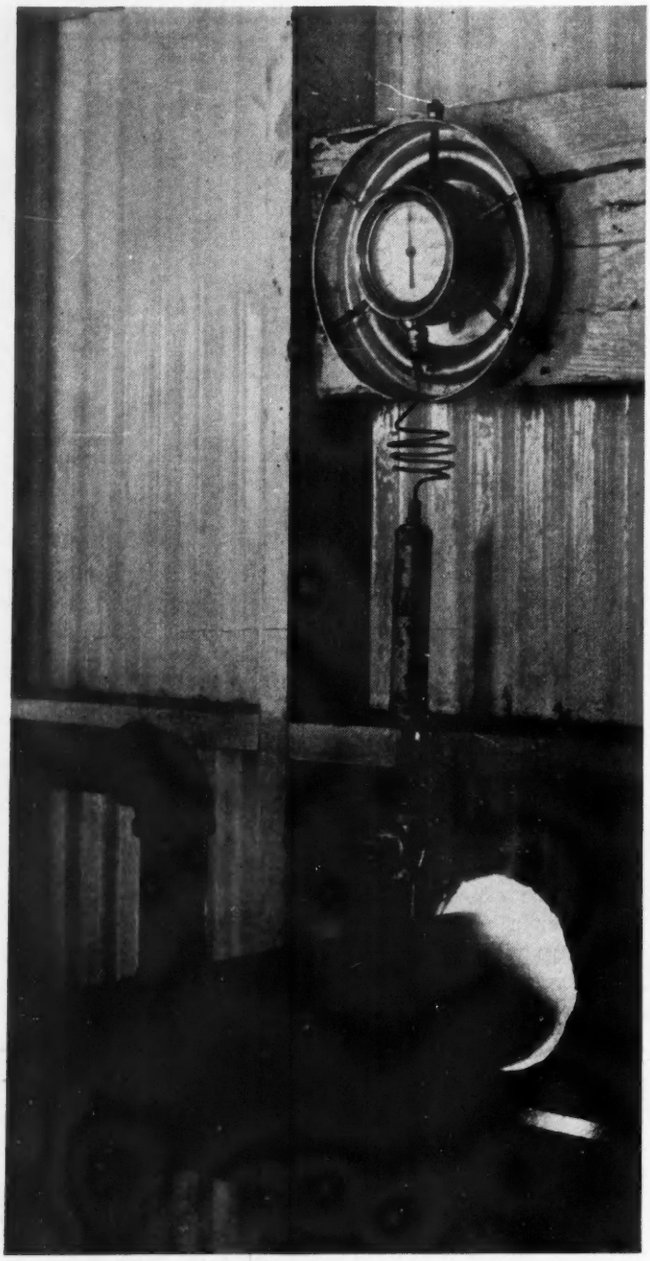
The straight line in Figure 2 marked "A" is

TABLE 1

Pump Pressures During Leakage Test

Interval—Minutes	PRESSURES		
	B	C	D
0	700	700	700
10	675	666	640
20	653	633	585
30	632	601	535
40	613	570	480
50	595	540	430
60	579	510	375
70	564	479	320
80	551	448	275
90	540	415	230
100	530	383	190
110	521	350	155
120	513	320	130

B—Valves in first-class condition.
C—Dead-line pressures for checking valve leakage.
D—Valves leaking and needing reseating.



theoretical only, being the pressure which should be recorded were there absolutely no leakage. This condition is, of course, unattainable in pipe line pump operation; that at "B" being accepted, by the company making the tests, as representing highly satisfactory valve seal.

After running and studying a series of tests for leakage as described above, an arbitrary deadline was adopted, above which valves would be accepted as sufficiently tight, while any value below this standard would call for overhaul. Curve "C" and Column "C" of Figure 2 and Table 1 respectively give the values accepted by the company for this deadline.

With this set of pressures and time intervals before him, it is not necessary for the engineer or repairman to take a series of pressure readings over an extended period. Simply by isolating a pump, charging it with line pressure, and then checking one gauge reading and noting the elapsed time since shut-off anywhere within the two-hour interval, simply comparing the pressure thus obtained with the reading on the deadline curve for the same elapsed time classes the job, if above the line, as satisfactory, if below, as in need of reworking.

Pumping Gauge Care

Probably subjected to more abuse through neglect than almost any other pipe line station accessory, the suction and pumping gauges are put in place and then rarely touched, unless or until the constant vibration of the delicate mechanism under pump pulsation or building tremor eventually wears away or strips out a section of the arc and tiny spur gear which connect the gauge hand to the free end of the Bourdon tube.

FIGURE 3

Full floating gauges, where subjected to pipe line pulsations, last longer and give more accurate readings. The gauge shown here has been suspended flexibly inside a holder and is connected to the line through a spiral length copper tubing. In one station this practice materially increased the life of individual gauge mechanism.

Even where the pump pulsation itself be damped by the installation of some effective pulsation shock absorber in the lead tying gauge to main line, the vibration of the station building frequently causes gauge failure. Either suction or pressure line may contact the structure, or some portion of the engine or reducing gear transmits vibration to the steel skeleton of the usual station building, and in turn the gauge is subjected to a severe condition for which it was not designed.

One company finding this excessive wear on gauges frequently introduced errors in pumping pressures which made the carrying of the maximum load permissible difficult, took the gauges from the framework of their station buildings and suspended them flexibly inside holders, improvised from discarded automobile brake drums, the gauges themselves being slung within radiating springs attached both to clamp ring of gauge and to the edge of the brake drum.

With the final connection between line and gauge through a spiral length of copper tubing, as shown in Figure 3, and the gauge spring-supported, it was found that pressure readings remained accurate, and that the life of the individual gauge mechanism was increased from the few months formerly found the limit to several years—in fact the first gauge has yet to go bad when mounted in one of the brake-drum and spring cradles.

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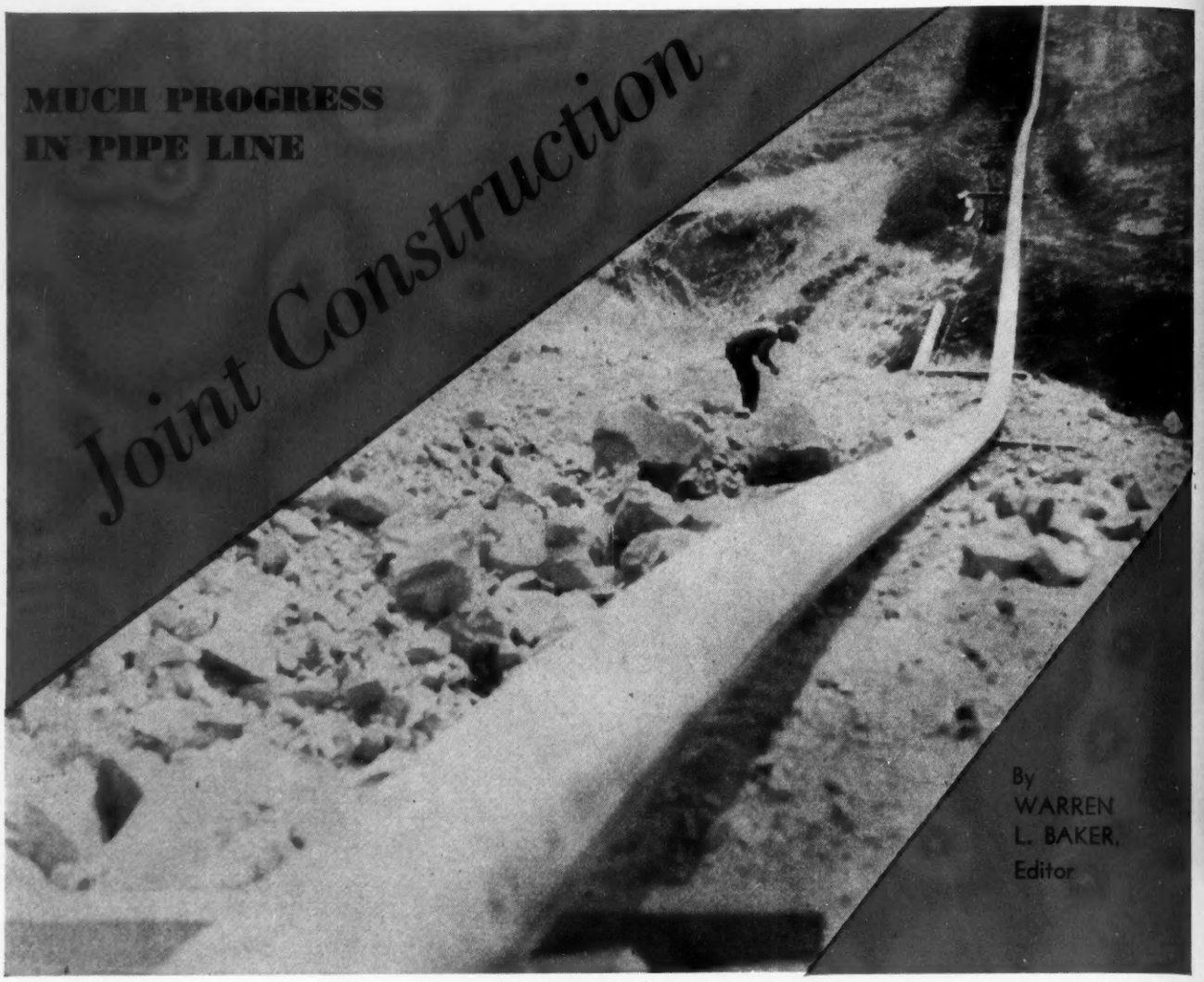
MUCH PROGRESS IN PIPE LINE Joint Construction



By WARREN L. BAKER, Editor

Scene showing rough terrain along Shell Oil Company's 300-mile line, which was completed in 70 days

PROGRESS in pipe line construction practices was great during the past year, exceeding any recent 12-month period. Outstanding among the advancements were the greater speed with which joints of pipe are connected, several new methods of procedure in joining them, and greater joint strength.

Speed of installation is a prime requisite of any type joint, especially in the oil field. It means lower installation cost in the end, and getting the line into service in minimum time—an important consideration when every day lost means added overhead, interest during construction, and loss of operating revenue.

Today it is realized that pipe joint economy, cannot be based on the first cost. The true cost of a pipe line joint cannot be accurately determined until after the line has completed its service. Therefore, many elements enter into compilation of the true cost of a joint, among which are the following:

1. Raw materials that go into making the joint.
2. The cost of skilled or unskilled labor necessary to make or install the joint.
3. The cost of any special installation tools and equipment, including depreciation, insurance, etc.
4. The influence of joint-making on the construction speed of the entire pipe line project.
5. The cost of repairs and maintenance chargeable to the joint after the line goes into service.
6. The cost of resulting service interruptions from possible joint failure.
7. The cost of any damage to property, etc., that may be due to joint failure.
8. Ability of the joint to constantly withstand the working pressures to be imposed.

Progress along the above lines has been made both in the welding and coupling of lines.

300-Mile Line in 70 Days

Remarkable speed, probably a world's record, was made in constructing a 300-mile crude oil line for Shell Oil Company from Bakersfield to Martinez, California. The line was constructed of 6-, 8- and 12-inch diameter pipe connected by plain butt joints, electrically welded without backing-up rings. The pipe ends were beveled to approximately 30 degrees. Sections of pipe 240 to 280 feet in length were lined up on skids and dollies for the firing line welding. The joints were tack welded as the pipe was lined up. Joints were welded in three beads, first with 5/32 and 3/16 electrodes, the second with ¼-inch, and the third or finish bead with 5/16-inch electrodes. Ap-

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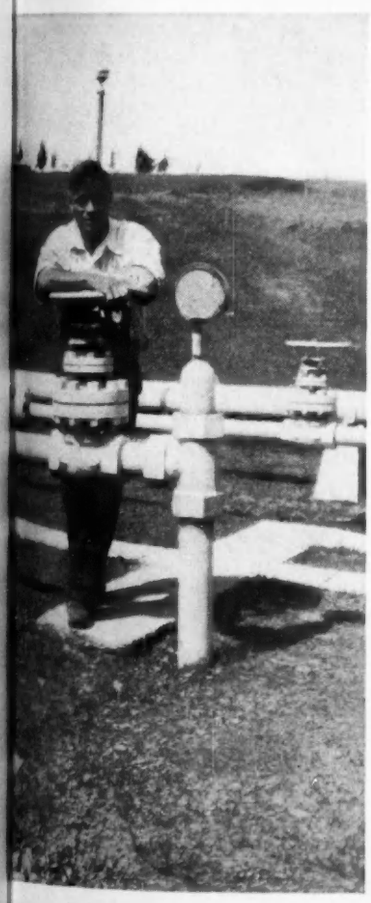

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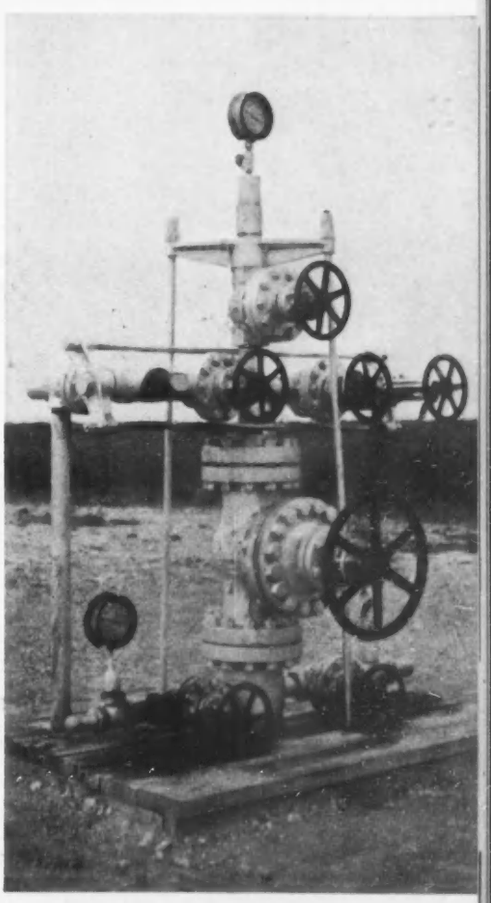


KEROTEST MANUFACTURING COMPANY . . . Pittsburgh, Pa.

proximately five joints were arc welded per hour. Testing by soap sudding and air pressure revealed no leaks.

The high speed of construction on Shell Oil Company's line attests to the great efficiency of the modern "firing line" method of pipe line welding. This method has no rival for speed. All the work is done practically as "straight-line" production. There is a crew for lining up the pipe, one for tack welding, and a third for the finish joint welding. They work in the order given. The finish welders come to each joint in a section with everything in readiness for being welded. The pipe is turned as the welding is done, permitting all welds in downhand position, best for speed and quality. As they complete a joint, the crews pass immediately ahead to the next one, and so on. When all joints comprising a section are welded, the entire section is tied into the line by "bell hole" welding, in which the joint is welded with the pipe stationary.

Stove-Pipe Welding Method

No record of welding of pipe lines for the past year would be complete without referring to the "stove pipe" method. Use of "stove piping" or "all-bell-hole" welding increased during the year. In fact, this method has come into quite general use during the past two years, displacing the "firing line" or "storm gang" method on most of the shorter lines and to some extent on the longer projects. The method is highly flexible in that it can be easily adapted to varying conditions of available equipment and man power. It is used with either acetylene or electric welding.

The stove pipe method of welding was an important advancement last year

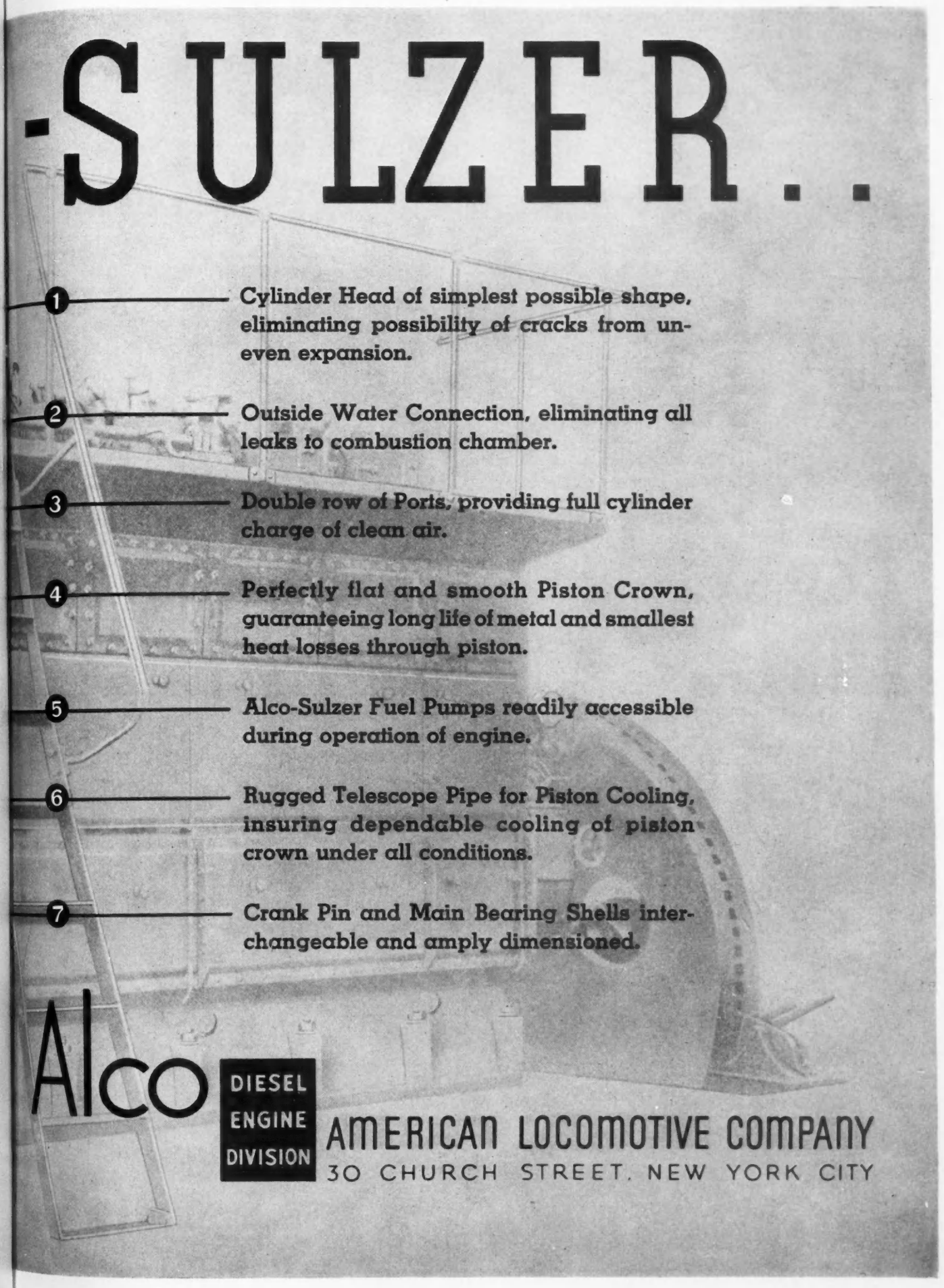
Making an electric stove pipe weld

Making an actelyene stove pipe weld

Although they differ in details, any of the "stove pipe" methods use the same basic procedure. The method differs from regular "firing line" procedure in that each joint is lined up individually one after the other, usually over the ditch, and are then welded into a continuous line, each weld being made without turning the pipe. In the simplest form, "stove piping," sometimes called the "stab-on-method," two operators commence welding the joint just as soon as it is lined up, eliminating the usual tack welding. If only one operator welds the joint, it is customary to put on about two tack welds to control the spacing on the side opposite from which the welding starts. Another length of pipe is then lined up, the weld made as before, and so on. All the work, including lining up and welding is done by one crew.

"Stove piping" is particularly advantageous on short length lines, and through muddy country, or under other conditions that make it impossible to complete any great distance during a day.

The practicality of the "stove pipe" method depends to a major extent on the welding speed. Although the speed of welding by the method is somewhat slower than with the "firing line" procedure, it has definite economies where a line is being laid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under unfavorable conditions, or where the total length may not justify "firing line" practices.

Thus, with the simpler organization which "stove pipe" welding makes possible, construction costs are often considerably reduced. The fact that a greater number of welding operators are becoming quite proficient in "bell hole" welding has contributed to some excellent production records with the new method.

Bending Pipe

On gas lines, the wrinkle-bend method of bending pipe to fit the ditch is becoming popular generally. A narrow band is heated a distance half to two-thirds the way around the pipe with the flame, and the pipe is then bent so as to leave a wrinkle in the pipe wall projecting outward. Wrinkles can be placed close together for short, sharp bends or they can be spaced more widely apart for the long, gradual ones.

Various cold bending methods are employed on oil lines, depending on equipment available for the job. Sometimes two or more lengths must be welded together first before the bending can be done. It is only natural that the greatest amount of progress has been made during the past year in handling the bending and line-up operators for the "stove pipe" method, since in rough terrain, where many bends must be made, this sets the pace for feet of line welded per day.

Much Welding Progress

Electric welding, first used in building pipe lines in 1928, continues to be improved and to be used to a greater extent. One large pipe line contracting firm estimates that 75 percent of oil industry lines in 1936 were welded by this method, which is double the percentage used just three years ago.

The rapid progress in use of electric welding of pipe lines has been made possible by steady improvement in arc welding equipment, including electrodes which determine the quality of the metal available for pipe joints, and arc welding generators which deposit the metal. Advancement in electrodes is indicated by the improvement in physical properties of welds. Today they are: tensile strength, 65,000 to 75,000 pounds per square inch; ductility, 20 to 30 percent elongation in two inches; density, 7.84 to 7.86 grams per c.c.; and corrosion resistance in excess of mild rolled steel. Formerly the figures were 40,000 to 50,000 pounds tensile strength per square inch, an elongation of five to 10 percent, a density of 7.5 to 7.7, and low resistance to corrosion.

Steady improvement in arc welding machines makes it possible for welders today to deposit metal 50 to 200 percent faster than with earlier model machines. Because of several advanced features, including better controls and time-delay idling devices, arc welding machines are more simple and economical today than in the recent past.

Acetylene welding has made considerable improvements in equipment during the past year too. Foremost has been the increased facilities for greater speed, which has consisted largely of more flames on the multi-flame torches. Work underway along these lines indicates that soon it will be possible to pour nearly twice as much metal as formerly. It is likely that seven flame torches will appear in the immediate future.

A bend made along a large oil transmission system

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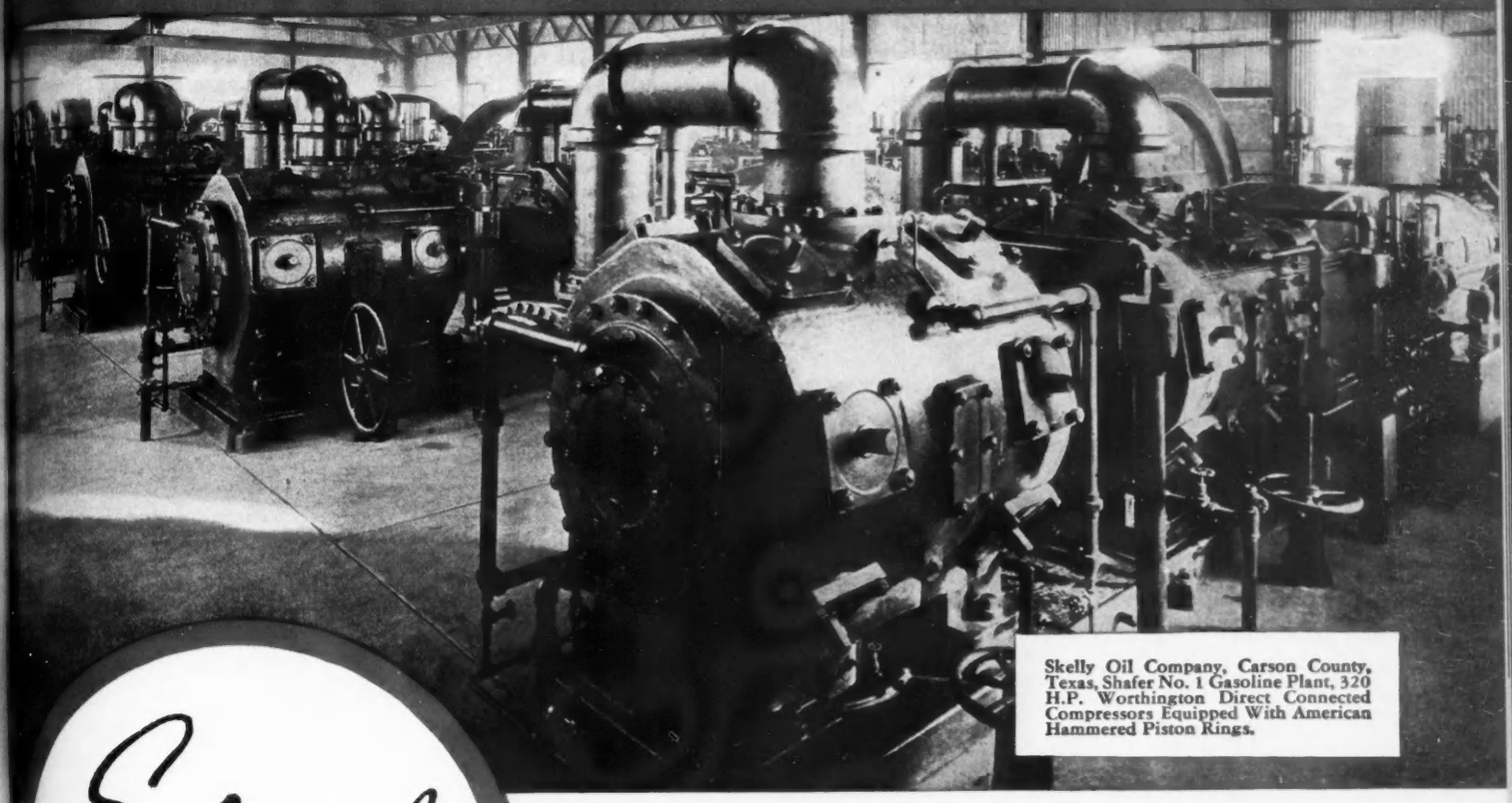

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Advancements in Coupled Joints

Manufacturers of the coupling type pipe line joint have made several improvements in their product. Outstanding has been the development of better gaskets for these devices. At least one manufacturer has developed a specially duck-tipped construction which has proved highly effective in resisting any deteriorating effect from oil. Great strides have been made in the past several years in the art of rubber compounding, and it is possible today to produce a rubber compound that in itself will resist almost any solvent or condensate. However, to be doubly sure, the double-protected type of gasket, with the duck tip, is now being made.

Another significant coupling gasket development in the past year has been the armored gasket, one in which a flexible helix or coil is imbedded at the tip of the gasket, in place of the duck tip. This metal is as flexible as the body of the gasket itself, yet presents a metallic "front" to the contents of the line, which shields the rubber back of it from the attack of any corrosive agent (even though the rubber itself may be capable of withstanding such action, as explained in the preceding paragraph).

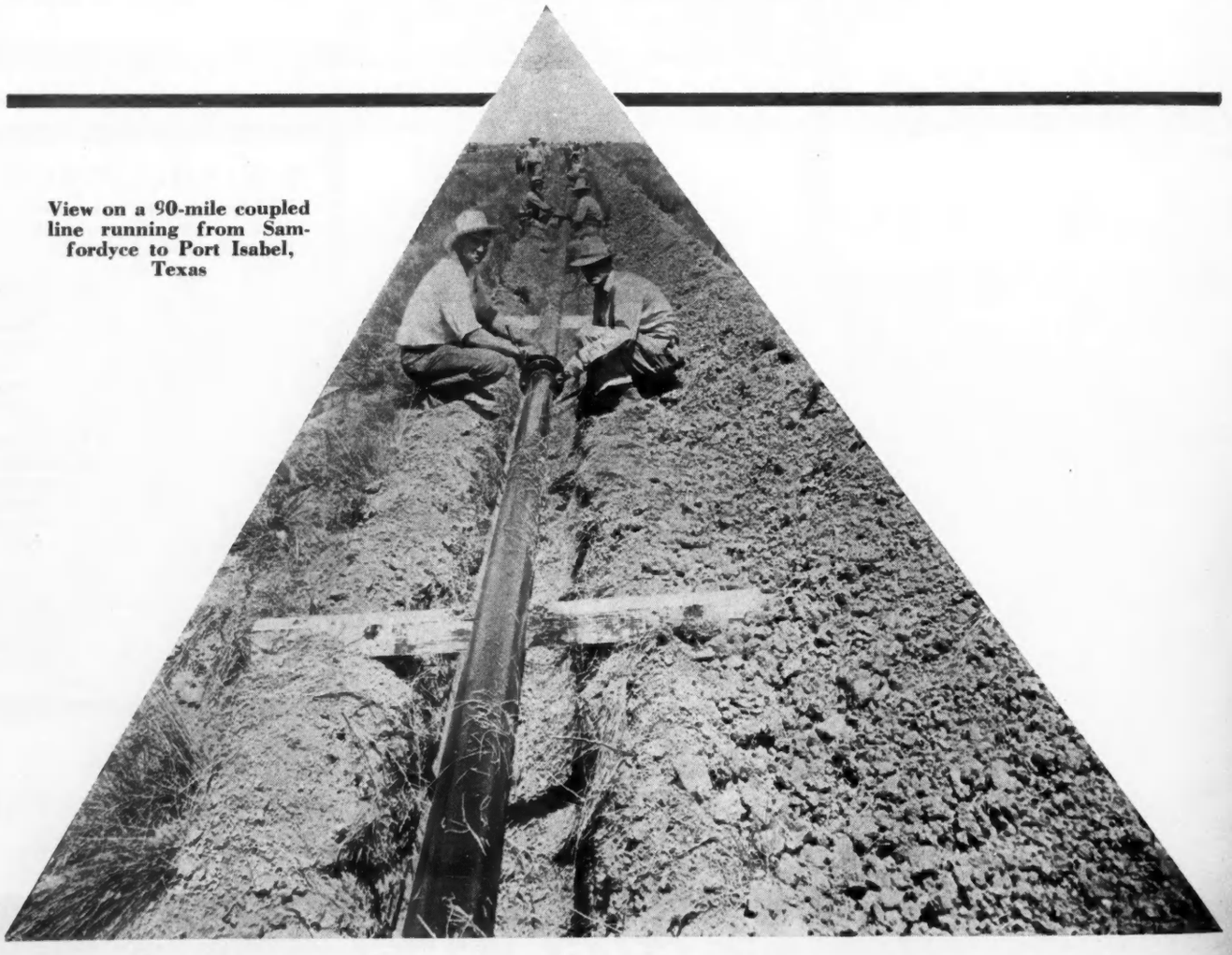
The strength of coupled joints has been greatly increased. On a test section of a line in northwestern Pennsylvania, which was near a pumping station where the working pressure often ran up to 1100 pounds per square inch, couplings gave perfect performance results. At the end of one 16-months period, one joint was dismantled and the gaskets examined. No deterioration could be found.

Manufacturers of pipe line couplings are able today to design a joint to meet any working pressure, by simply varying the thickness of the middle ring to take care of the required pressure. This is all a matter of mathematical formula that has been worked out.

One pipe line construction job finished in 1935 used 10,000 couplings. A recent query resulted in the answer that not a single coupling leak had developed to date, although maximum working pressures of 700 pounds per square inch have been used.

Coupling construction of today is very simple, there being only a few parts. These are all "factory-made," and are simply assembled in the field. In one type coupling, there is a middle ring, which is simply a sleeve, into which the plain-end pipe is inserted. This middle ring is flared on each end, to receive two wedge-shaped rubber gaskets. Back of these gaskets are two follower rings. Through these follower rings, across the coupling, are inserted bolts which, when pulled up, in turn cause the follower rings to compress the gaskets against the middle ring. This compression on the gaskets causes them to grip the pipe with great force, thus giving a positive seal, yet affording flexibility to take care of all movements of the pipe, which consist of expansion and contraction, vibration, settling, undermining, deflection for curves, etc.

The speed with which coupled lines may be connected has also been advanced. It is said that, regardless of weather conditions, a 20-inch joint can be assembled by two men in 12 minutes.



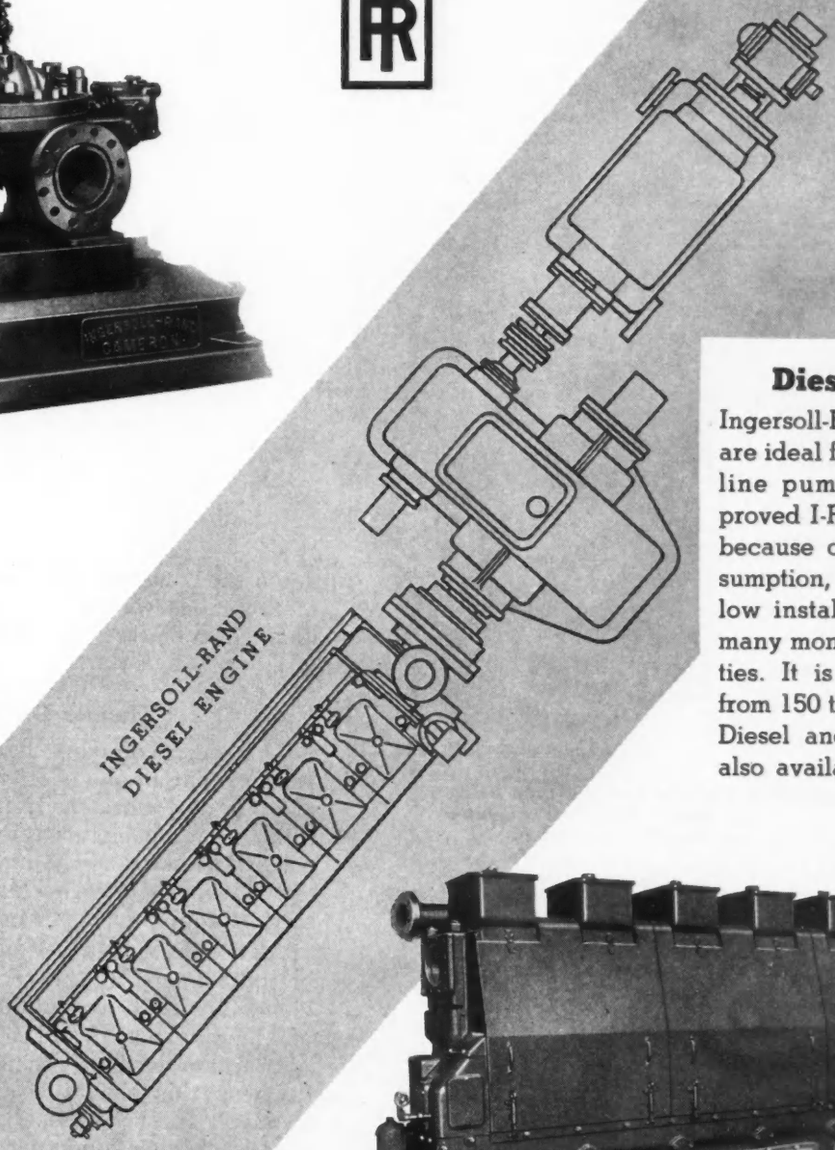
View on a 90-mile coupled line running from Samfordyce to Port Isabel, Texas

PROVED EQUIPMENT FOR PIPE-LINE SERVICE

INGERSOLL-RAND PIPE-LINE PUMP

Pipe-Line Pumps

Ingersoll-Rand has been a leader in the development of the centrifugal pump for pipe-line service. Numerous successful installations and a vast amount of research form the background of experience for the modern and efficient Cameron pumps now offered by Ingersoll-Rand for pipe-line service. These units are suitable for a wide variety of service conditions and may be driven by electric motor, steam turbine, Diesel engine or gas engine.



INGERSOLL-RAND DIESEL ENGINE

Diesel Engines

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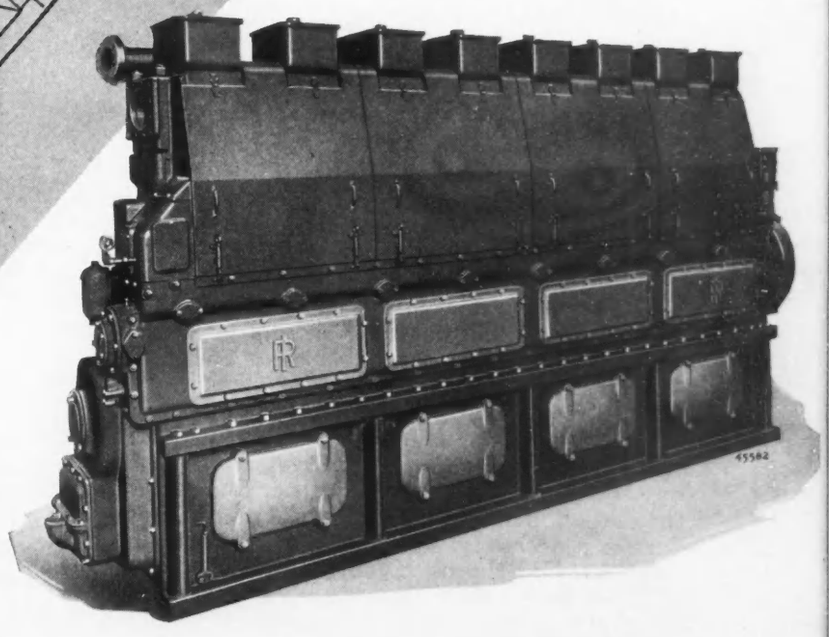

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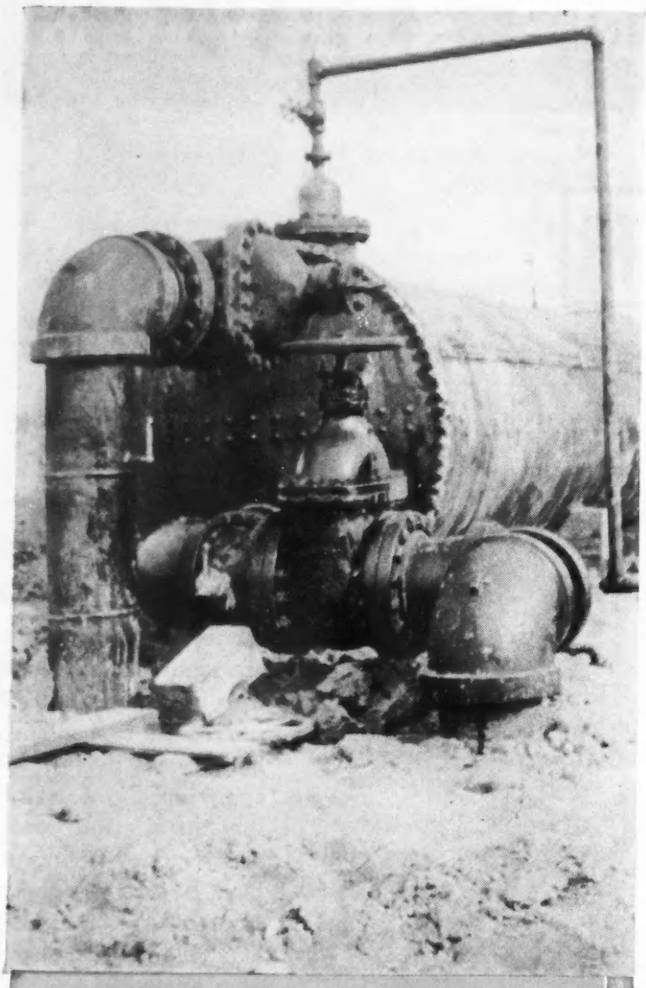


A crude oil preheater of the type using boiler tubes, which reduces the chore of periodical clean-outs.

Trends in Operating

By ELTON STERRETT

PERHAPS the outstanding advance in pipe line operating practice during the past year has been the increased ability of pipe liners to crowd two barrels of fluid through a line where formerly one was considered good performance.

In the handling of new or different petroleum products there has developed an open-minded attitude of trying innovations, with conspicuously satisfactory results.

One company, handling Sulphur Bluff and Talco crudes, and daily gaining knowledge of the stubbornness of this particular type of oil, found heating at the station, before entering the suction header of the pumps, a necessity. For this purpose a steam heated unit, carrying the oil through ordinary boiler tubes 3 inches in diameter, was found to give much more effective heating and to require much less cleaning work, than the conventional and more widely used types of heat exchangers incorporating tubes with shorter passes but greatly reduced cross-sectional area per tube. With this type of heater the only operating care was to maintain steam pressure to give maximum heating without affecting or breaking down the composition of the crude. Periodic cleaning of the tubes was accomplished quickly with an ordinary locomotive type tube cleaner with a minimum of labor or lost time.

Handle Different Crudes

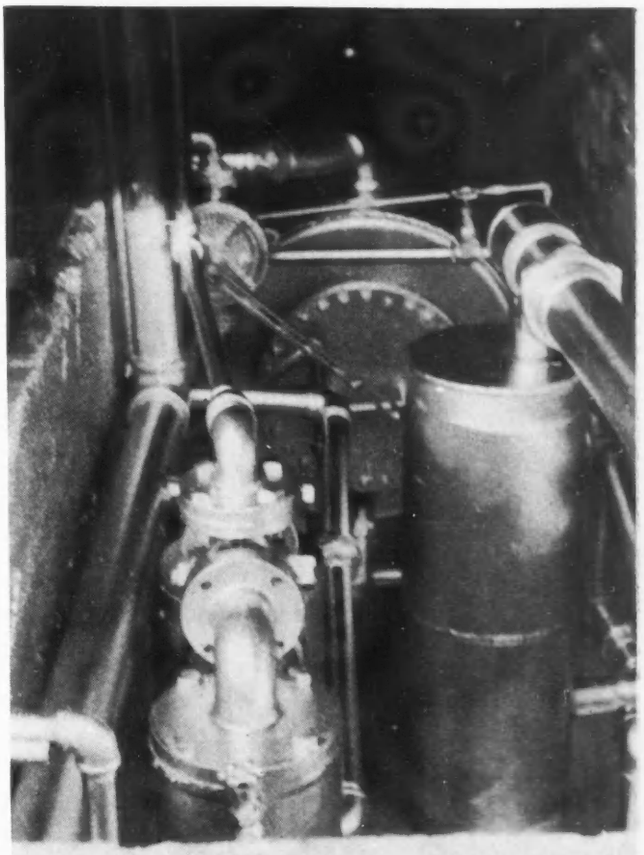
This same company, handling Talco (and Sulphur Bluff) crude in one of its main lines between batches of other and more easily pumpable crudes, gradually came to accept a throughput of around 7000 barrels per 24-hour day as the maximum obtainable without extensive, and expensive, changes in its lines and station equipment.

As the heavy crude was not charged alone to stills in the refinery at the receiving end, but there was blended with other and lighter materials, the plan of blending Talco and a lighter crude at the main line station discharge manifold was tried. So successful was this that the daily throughput increased promptly to over 21,000 barrels; thus carrying 14,000 barrels of other crude per day in addition to the 7000 of heavy stuff formerly taxing line and pumps to the utmost.

That same line is now using its main line pump station to add one barrel of natural gasoline (casinghead) to each 20 of Talco crude pumped, securing sufficient reduction in pump load to allow an increase of over 100 percent as against straight heavy crude pumping alone. Although not directly concerning the pipe line, the gasoline-cut crude is also found to be much easier to handle at the refinery end.

Another experimental pipe line run, initiated in 1934 but perfected during the past year, was the successful handling of batches of white gasoline and kerosene through an eight-inch carrier formerly used solely for transporting an amber-colored gasoline; i.e., a gasoline blended and given its distinctive trade color at the refinery and pumped in this condition

Pipe Line Practice



Aluminum painted station pits aid identifying apparatus carried there, and make leak detection easy.

through 190 miles of line to the company's marine terminal.

Early experimentation with the white gasoline in comparatively small slugs led to careful checking of the first run of kerosene, with check determinations to ascertain the amount of contamination or mixing of fluids being taken at various points and frequent intervals throughout the run and a thorough check-up, by means of color determination, gravity and flash cup tests, made at the receiving end.

A typical run of kerosene through this line, from the standard gasoline through the intermediate white slugs and thus back to amber again, included the pumping of 1900 barrels of white gasoline (1500 of this amount being recovered as white at the marine terminal) behind a regular run of amber; then followed a run, in two lots, of a total of 109,620 barrels of kerosene. Out of this amount after being pumped almost 200 miles, combined cuts of mixed materials totalled only 3620 barrels deviating from standard specifications. Following this kerosene run came a second slug of white gasoline, 2000 barrels in all, of which only 200 was sidetracked as being off color or otherwise needing re-run to standardize.

So effective and satisfactory have been these batch runs that the company now handles white gasoline and kerosene through its line between regular pumpings of the amber-colored fluid as easily as tank cars of the various products are made up into trains for shipment.

Electrification of pipe line stations, either partially through the installation of additional equipment with electric motor drive or through the building of intermediate stations entirely powered by electricity has changed the method of operation from one involving primarily the supervision of internal combustion engines to one demanding the handling of motors and—in most instances—the maintenance of centrifugal pumps rather than plunger units.

Few of these electric drives incorporate the slow-speed motor and the step-up drive for centrifugal pumps, despite the advantages sometimes found in the slower speeded motors, it being generally felt that any gain in the motor efficiency is lost in the overdrive of the gearing. Of the many stations equipped with electric drive pump units during the past year, a clear majority uses the direct-connected motor-centrifugal unit.

Use of the above type of unit further simplifies the station operator's job, his sole care, apart from periodical lubrication, being the maintenance of packing on the pump shaft. One company using this type of drive and pump extensively, removes the usual hexagon gland nuts furnished by the centrifugal pump manufacturer, substituting therefor wing-nuts which must be adjusted by thumb and finger pressure only.

Operating men were almost unanimous in declaring that it would be impossible to check packing leaks with the wing-nut set up only "handy," but tests of packing, properly cut and inserted, proved this method developed ample pressure to prevent leakage; yet did not distort the packing unduly and cause rapid cutting by the high-speed shaft.

An interesting set of results obtained by running a pair of pumps first with the hex adjusting nuts,

and then according to the company's rule is presented in Table I.

Packing life on both units was shorter than normal, but was cut short by the fact that the pumps were on suction with plunger units, and considerable fluctuation in centrifugal output was thus inevitable, with consequent packing wear and more frequent adjustment than would have been required were the centrifugals on suction alone.

The figures quoted above show again that more packing is ruined by too tight adjustment than is worn out by the pumps, be they plunger or centrifugal, not to mention the horsepower wasted in needless packing friction.

Although the newly installed electrically powered stations do not require the frequent maintenance work of the more complicated station where both power is generated and pumping performed, the usual shift crew or running tour has not been reduced in numbers from one considered adequate to handle the Diesel or gas powered pumps.

Where electrical equipment is added to supplement earlier units of other types, however, an electrician is usually added to the station force or his services are so scheduled as to allow him to divide his time and thus maintain the electrical end of two or more adjacent stations in a system.

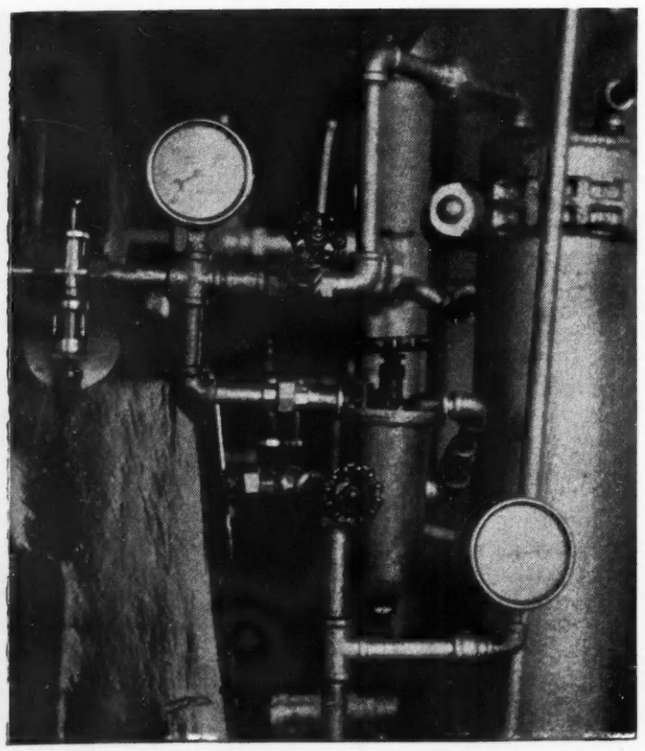
During the past year pipe line superintendents and chief engineers have noted a rather interesting sidelight on the state of mind of a man whose financial worries have been lightened. Since the first of the pay increases recently inaugurated went into force the general superintendent of one pipe line system reports a 40 percent growth in worth-while operating suggestions turned in by the men working in the various stations under his charge. Another supervisor, without detailed statistics to draw from, as no earlier record of suggestions was kept, estimates a "100 percent increase, with a 300 percent increase in workability thereof."

TABLE 1

Centrifugal Pump Packing Life. Days Run Before Replacement

PUMP No. 1 400 Lb./Sq. In. W. P.		PUMP No. 2 800 Lb./Sq. In. W. P.	
Hex.	Wing	Hex.	Wing
22	48	16	35
21	37	17	38
20	38	15	40
18	39	18	42
Average 20	40	Average 16.5	39

With dual gauges, cooler, filter and visibility discs behind all sight feeds, the modern Diesel or gas engine lubricating system is effective and reliable.



With the lessening of financial burdens has also come a wider appreciation of the value of safety first practices. Operating methods, theoretically designed to afford maximum safety for the men, has in a number of instances been radically changed as the men of the stations themselves took hold of the idea and made its improvement a personal matter.

Paralleling the safety drives in pipe lines is one tying in with it and looking toward the diminution or elimination of fire risks and the provision of even better and more certain means for coping with fire if it does break out.

In stations where electrical equipment is operated together with other types of power drives, one pipe line company has completely supplanted the soda-type of fire extinguishers and now supplies all such stations with the carbon tetrachloride type only—as being applicable to fighting fires in electrical equipment as well as those involving crude oil or refined petroleum products. By making this slight change in station equipment there need be no hesitation in tackling the fire with the nearest extinguisher available, regardless of where it is or what is ablaze.

Maintenance work, like accident prevention, is being changed more and more to emphasize the prevention of breakdowns, rather than the quickest way to make repairs after machine failure. Frequent and thorough inspections, involving periodic down time and careful checking of all wearing points (whether under friction, stress or vibration) are now made regularly in many main line stations, with a carefully worked out schedule of bearing wear, maximum or minimum clearance tolerances, and other checking data which must be met or the part failing to meet requirements replaced.

At one station with six pump units, over the first 15 months this frequent checking was in force, the down time for inspection and work made imperative by it was found to have involved 19½ hours less time than that taken out for running repairs to similar units in the same length of time under the previous plan or making repairs only when operation failures necessitated them. It is confidently expected that subsequent years will show a greater reduction in operating time sacrificed to inspections, due alike to better ways of checking and to the fact that much time was lost at first in bringing many parts up to standards required under the new schedules.

The Past Year in Cathodic Protection

FEATURED BY IMPROVED UNITS AND INCREASE IN NUMBER OF INSTALLATIONS

By DENIS S. SNEIGR

IMPORTANT improvements in both the wind-driven unit and the gas-engine unit, as well as a sharp increase in the number of installations, have marked the development of cathodic protection equipment for pipe lines during the past year.

While the basic principle of these two cathodic protection units remains unchanged, the complete redesigning of the windmill, and the addition of another cylinder to the engine, have resulted in more efficient operation in both units.

The other two types of protective equipment—the rectifying unit and the motor generator set—have remained unchanged since last year.

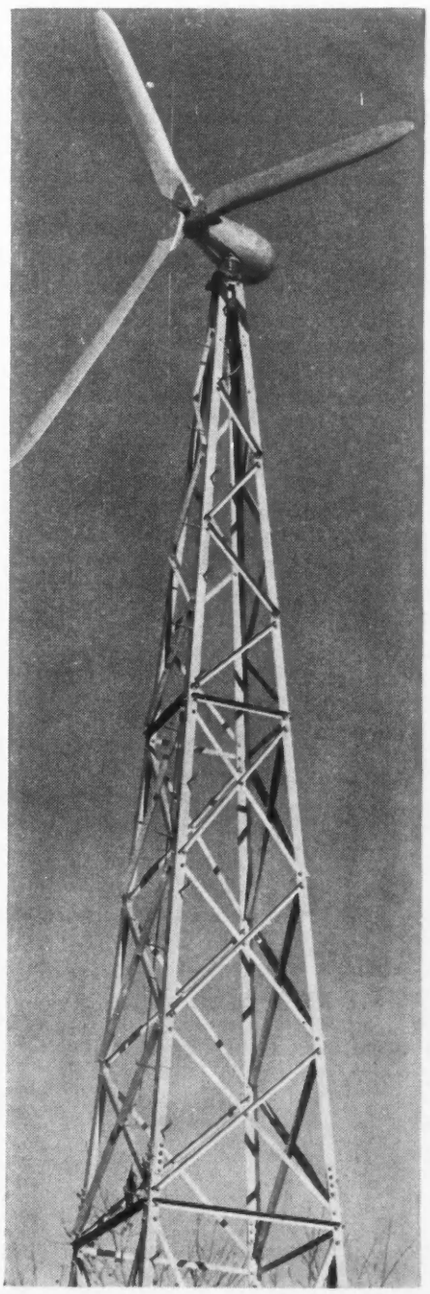
Wind-Driven Units

The wind-driven generator probably has seen a greater improvement during the past year than ever before. In building the 1937 model, past experience along with a study of cathodic protection requirements has resulted in a completely redesigned and improved machine.

Since these units now are being installed in sections of the country which heretofore did not use the windmill, a three-bladed variable-pitch propeller has been introduced, which will more nearly meet any wind condition. The additional blade greatly increases the starting torque of the propeller in low winds, while the variable-pitch feature serves as a control of overspeed in high winds.

The new type propeller is mounted in the rear of the machine in place of the tail, thus serving both as a propeller and as a tail. The elimination of the tail has several advantages, among which are a decrease in the overall weight of the machine and the elimination of considerable vibration.

New model wind-driven generator for cathodic protection.

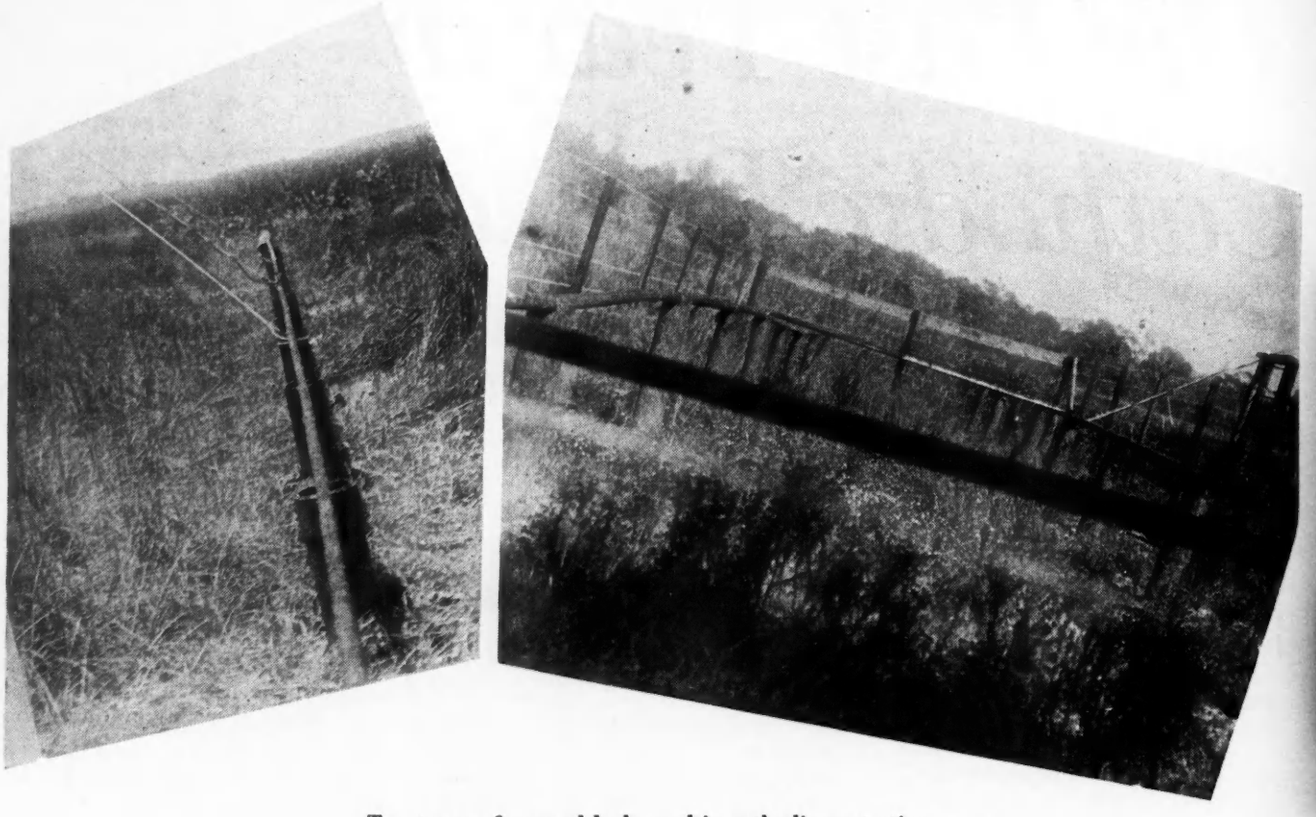


The step-up gear between the propeller and the generator on the 1936 model has been replaced with a direct drive on the new machine. This feature simplified the machine, solved lubrication problems and helped decrease the starting load of the propeller.

With the direct drive a slower speed generator is used. The build-up speed on the new unit is about 52 revolutions per minute, with the maximum output being reached at 240 revolutions per minute. The commutator is in the front or nose of the machine where it can be inspected easily. The generator is protected against abnormal working conditions—such as open circuits, overloads, or short circuits—by a thermal element.

The entire generator is mounted on a turntable that pivots on a vertical shaft and two roller bearings, one twelve inches below the other. The collector rings connecting the external circuit with the generator are located just above the top bearing. The rings are totally enclosed and are thus protected against films of grease or moisture. In case the machine must be stopped for inspection, the unit is equipped with a built-in manually operated friction brake.

This year the generator is manufactured in two sizes, one of 12-volts and 40-amperes, and the other of 20-volts and 80-amperes. Another feature which adds to the flexibility of the windmill is the variations in



Two types of ground beds used in cathodic protection.

the height of the tower to accommodate the unit to wooded areas or other wind breaks.

With these several improvements and changes, the wind-driven generator is becoming more widely used by companies interested in cathodic protection. In the early part of 1936, the installations were confined to Texas, but since that time windmills have been installed in Kansas, Oklahoma and Mexico.

Engine-Driven Units

The engine-driven units, which use either natural gas, gasoline or kerosene for fuel, have been improved over last year's model by increasing the number of cylinders from one to two, and by substituting a magneto in the ignition system in place of the power from the generator, which was used last year.

The two-cylinder engine also is air-cooled, and it has retained all the structural advantages of the old model, as well as being more efficient and economical to operate.

In place of the governor, which controlled the speed of last year's model, the torque control principle has been applied to the new engine. This allows the unit to operate at varying speeds, depending on the required load. That is, when the load changes, the speed of the engine changes to compensate for it and in this way the engine operates at its maximum efficiency.

On the new engine, when the load either is relieved or too greatly increased, the engine speed is increased. If the speed reaches 1200 revolutions per minute, an over-speed device automatically shuts down the engine. Normally, the engine operates between 400 revolutions and 900 revolutions per minute.

Although another cylinder has been added to this engine and therefore a larger crankcase, the consumption of lubricating oil and fuel is about the same as on the old one cylinder model under the same operating conditions. Besides this economic factor, the two-cylinder engine operates smoother, is more flexible, is fitted with an air and gas cleaner and complete force lubrication throughout.

Purchased-Power Units

The two types of cathodic protective equipment using purchased power still are finding a heavy demand wherever power lines are available.

The motor generator sets, built in various sizes to discharge any required number of amperes, are being installed chiefly around tank farms, pump stations and refinery yards. Such sets require very little attention.

The other type of purchased-power unit, consisting of a transformer for reducing the power line voltage and multiple three ampere units for changing the alternating current to direct current, is being installed wherever a pipe line is conveniently located with respect to a power line. The advantage of this unit is that it requires practically no attention and gives a steady, pre-set output of power.

Increased Number of Installations

On the first of January, 1937, United Gas System had a total of 80 cathodic protection units in operation protecting about 200 miles of pipe. These 80 units are composed of 19 rectifying sets, 30 windmills, and 31 gas engines.

During 1937, United Gas System plans to install another 75 units, consisting of 14 rectifying sets, 22 windmills, and 39 gas engines. These 75 new units will protect approximately another 200 miles of pipe.

The Texas Pipe Line Company as yet has not mapped

PIPE LINE ENGINEERS

are invited to mail the coupon below for full details on the revolutionary

TNEMEC PROCESS *of* CATHODIC protection for pipe lines

NO PITTING!
NO CORROSION!
after 18 Months in Hot Spot

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By CONTRAST—TNEMEC PROCESS Coatings, tested 18 months to 3 years in the worst "hot spots" in the Mid-Continent, Gulf Coast and Rocky Mountain areas, when uncovered for inspection were found, in *every* instance, in perfect condition, tight-bonded to the pipe, and the pipe clean and with *no trace of pitting or corrosion.* A sample in a bad West Texas "hot spot" was hammered briskly with a ball-pein hammer, then with the edge of a heavy trowel. Coating did not chip or crack. It had not dried out or become brittle.

These are strong claims. We ask, not that you believe them but that you *investigate* them. The secret of TNEMEC'S amazing records is that the patented primer changes every trace of incipient rust on the cleaned steel into harmless calcium ferrite. No corrosion, no battery-action, can continue on the steel *under the coating.* Of the many, one must excel. Engineers owe it to themselves to make their own investigations. Mail the coupon as a starter. No obligation whatever.

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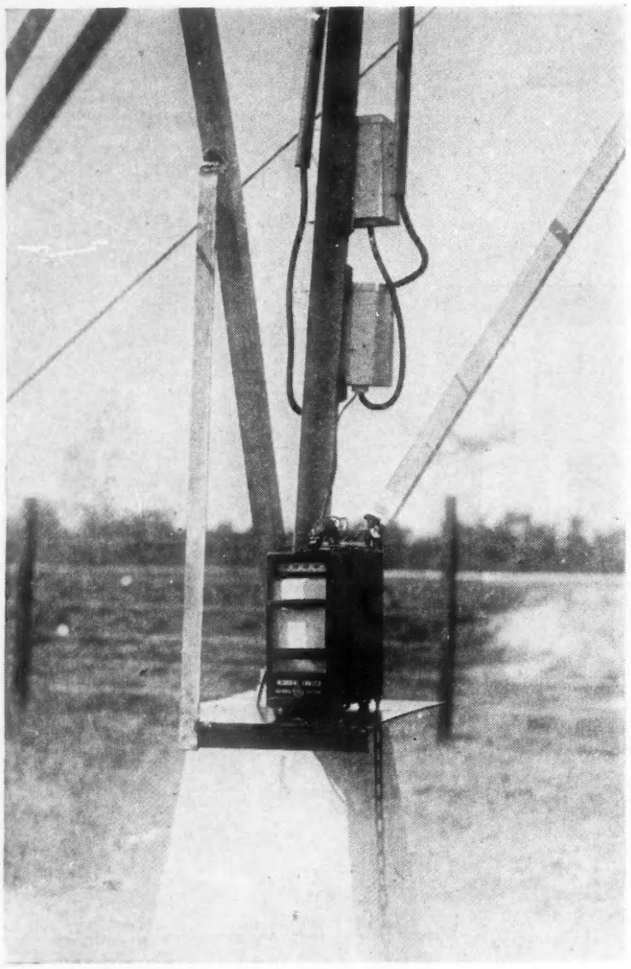


out a program for 1937, but during the preceeding year seven windmills and three motor generator sets were installed. Also, The Texas Empire Pipe Line Company, in conjunction with United Gas System, intalled one gas engine during 1936.

While Gulf Oil Corporation, Houston Pipe Line Division, only installed two wind-driven units during the past year, that company is making a survey to determine the feasibility of installing additional units.

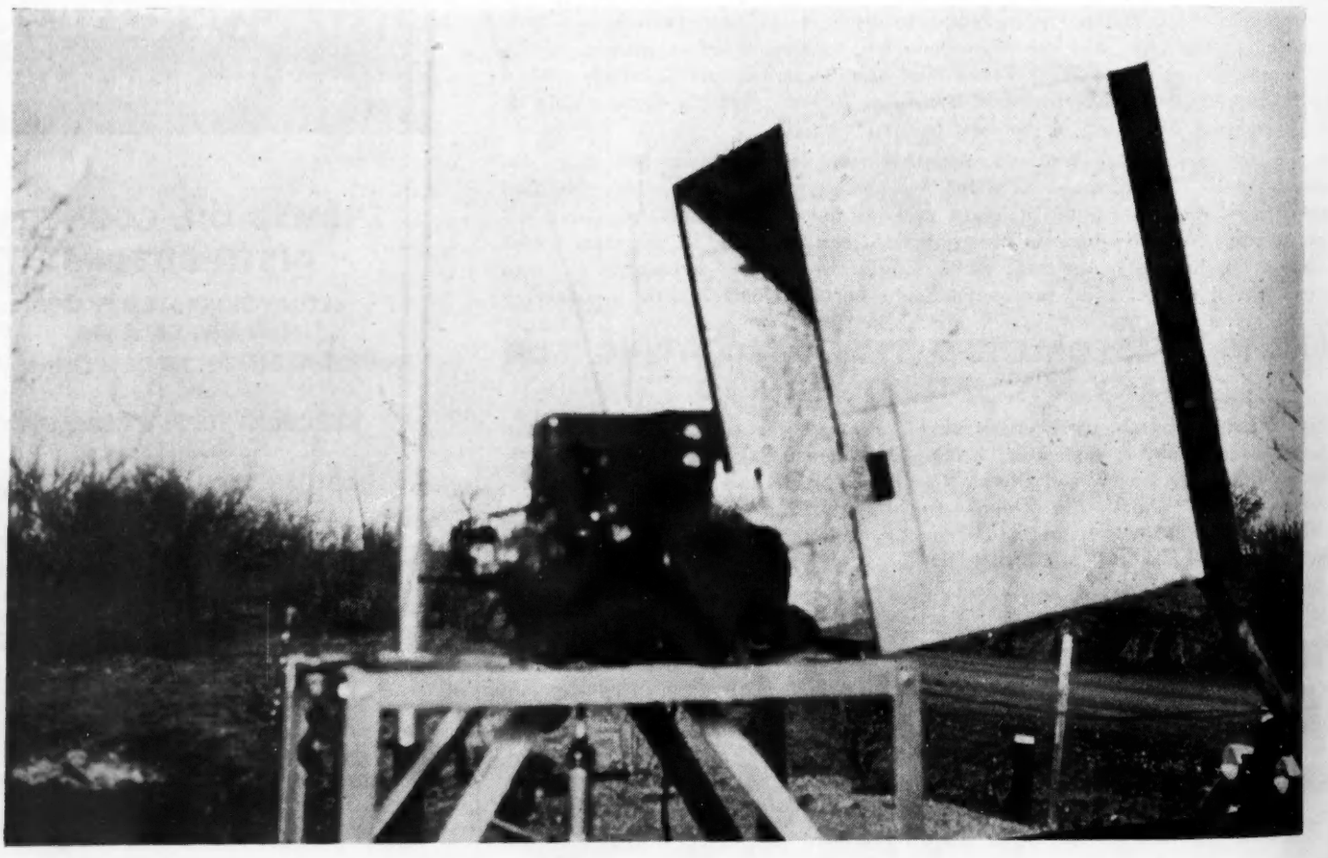
One of the Gulf Oil Corporation's installations, near Beaumont, is unique in that Walter Rogers, company corrosion engineer, has installed a direct-current recording ammeter on the unit. The recording ammeter will remain on the windmill for one year, and at the end of that time it will provide a continuous record of the output for that particular unit.

During 1936, Humble Pipe Line Company chose the wind-driven unit exclusively, installing five. At the present time, the Humble is not prepared to release its program for the current year. Shell Petroleum Company, during 1936, confined itself to the rectifying set, installing three units. In 1937, the Shell plans to install another twelve such sets.

The most important development in cathodic protection equipment in sight for the future is a pneumatic engine which will operate on gas pressure. Such an engine can be installed at any point in a gas line where there is a considerable drop in pressure. This reduction in pressure will operate the engine and provide an economical source of power supply for generators to protect the pipe lines in the vicinity.

Left: Recording ammeter on Gulf Oil Corporation's windmill near Beaumont.

Below: One of the new two-cylinder gas engines.



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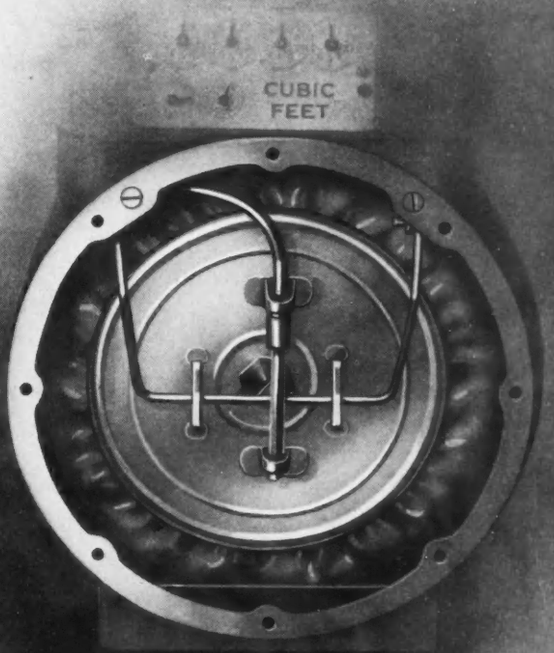
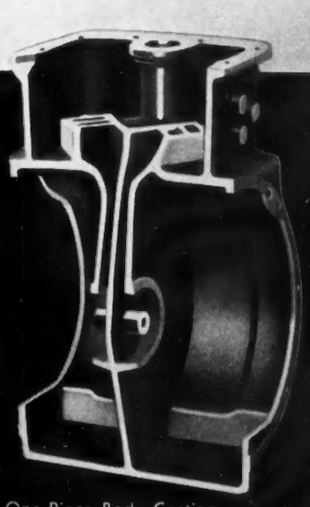
The back disc is anchored rigidly to the middle partition. Flag rods are so shaped and supported as to produce no unequal motion of fundamental measuring wall.

Ironcase leathers are the product of continuous research to develop the best leather and oils for specific gas conditions. Raw materials, uniformity of grade and thickness, special processing . . . all conform to strict laboratory standards.

Add these and other diaphragm qualities to the many distinctive Ironcase features. You have a proved total of meter accuracy and trouble-free service years. A full range of capacities; high or low pressures.





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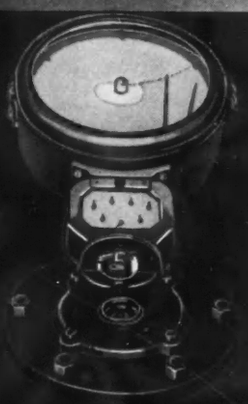
Eliminates Internal Leaks



Volume and Pressure Gage
Charts Hourly Rate of Flow
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These and Other Important Features Fully Described in Catalog EG-40

Thirteen Railroads Crossed In 2½ Mile Line

By BRAD MILLS,
Associate Editor

PAN AMERICAN Refining Corporation recently completed construction on 10-inch and 12-inch petroleum products lines between its Texas City Refinery and loading docks on Galveston Bay, which, although short in length, provided several obstacles. Al-

Small truck winches, as shown above, were used for pulling sections of the pipe line into place in the most inaccessible sectors.

The crawler-type, crane and winch equipped tractors in the center photograph are lowering the pipe into the four-foot ditch.

Sump holes, as shown to the right, were dug in the low places for draining the water from the ditch. The line was laid in terrain only a few feet above sea level.

though the length of the parallel lines was only 2½ miles, it was necessary to pass under 13 railroads and half a dozen highways. The right-of-way also called for dodging a network of older pipe lines, and traversing a marshy area that retarded construction progress.

In passing through a tank farm, construction necessitated caution and the location of a maze of pipe lines crossing the right-of-way at several angles. The two lines passed under some of the older lines, over others, and between a number of pipe combinations.

A ditch four feet wide and four feet deep was dug for the parallel lines. The actual digging of the ditch did not require a special effort, but the marshy nature of the soil caused trouble. Water half-filled the ditch in the low spots, and small pumps were used to remove most of the water. The ditching was done with a drag line, and most of the back-filling was done in the same manner.

The line was completed by Dewey T. Ross, Inc., the contractor, in 27 days, or about two weeks less than the time required for a similar project completed some time ago. The equipment used was similar to that used in construction of major pipe line projects. Both lines were cleaned, primed, wrapped and coated with hot asphalt paint.

The ground when disturbed became little more than a mud hole, and made work not the easiest.

The photograph below shows a section of the parallel lines ready for back-filling.

CONSTRUCTION FEA
THAT APPEAL TO

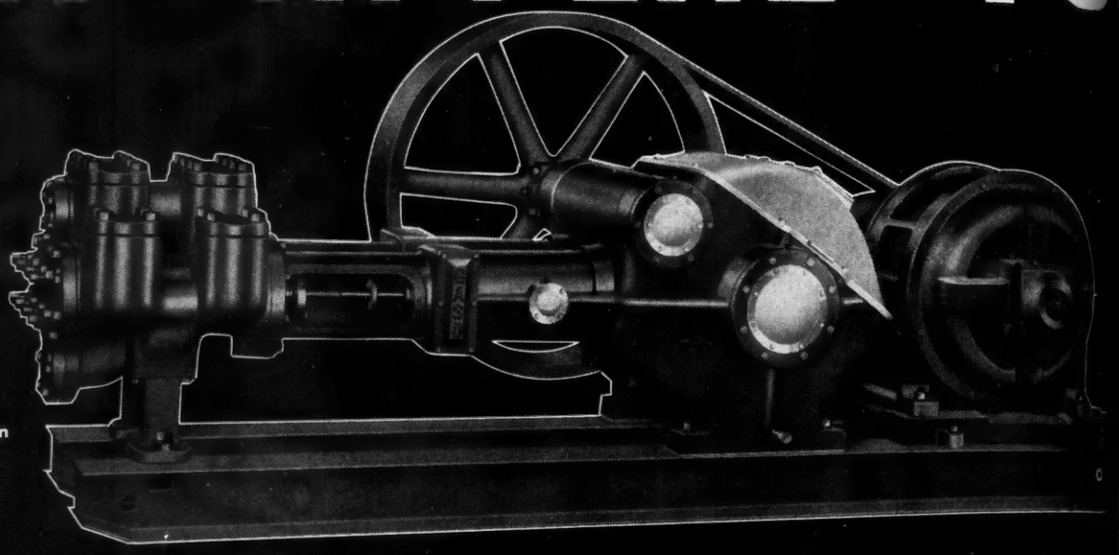
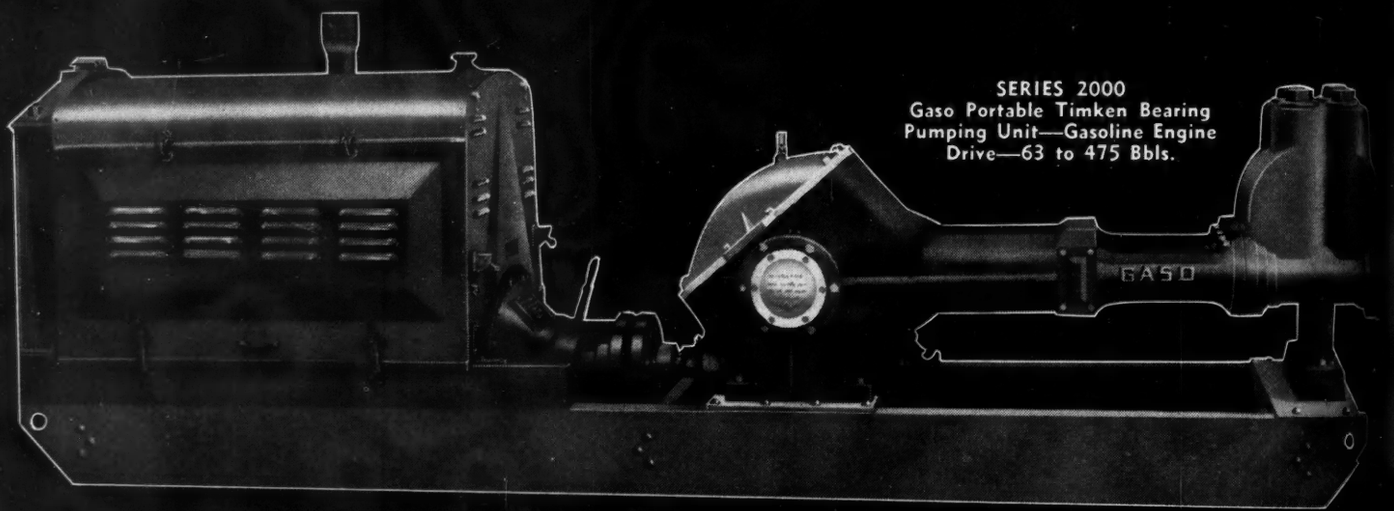
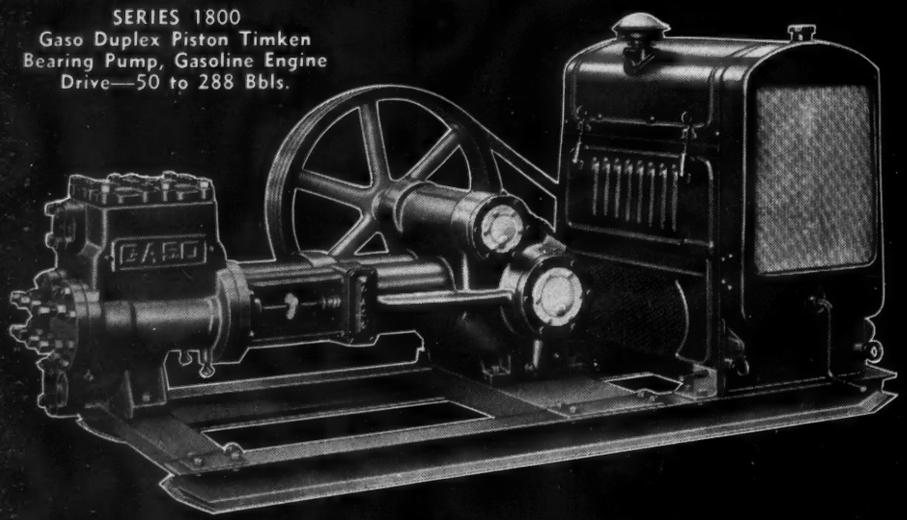


FIG. 1742
Gaso Duplex Piston Timken
Bearing Power Pump—
54 to 250 Bbls.



SERIES 2000
Gaso Portable Timken Bearing
Pumping Unit—Gasoline Engine
Drive—63 to 475 Bbls.

SERIES 1800
Gaso Duplex Piston Timken
Bearing Pump, Gasoline Engine
Drive—50 to 288 Bbls.



GASO
PUMPS

ATURES OF GASO PUMPS
TO PIPE-LINE ENGINEERS

GASO Pumps represent a 20-year evolution. Close specialization on one type of product for one industry has enabled GASO to evolve a line of pumps exactly suited to the service requirements of their field and highly perfected in every mechanical detail. Just a few of their outstanding features, which have helped to make them the choice of pipe line engineers throughout the world, are here listed:

No Overlapping of Piston Rods. Long frames prevent overlapping, so pumped fluids will not reach crankcase.

Extra-Large Valve Openings and Fluid Passages permit proper filling at highest speeds without undue shock or loss of power through friction.

All Valves on One Level, except in Valve-Pot type where suction valves lift through discharge valve seats, render all valves easily accessible.

Extra-Deep Stuffing Boxes give tightness without undue tension, reducing friction.

Gears Center-Mounted on Shafts, equalize pumping load on bearings, promoting long life.

Cranks Set at 90-Degree Angle give overlapping piston stroke, assuring smooth, uniform flow.

Uniform Wear on Ring Gears. Worms are hardened alloy steel, ring gears bronze, thus wear is uniform on ring gear, and tooth profile is not altered.

Extra-Large Timken Bearings. Crank, pinion and worm shafts are mounted on extra-large Timken Tapered Roller Bearings, each operating in separate removable cast iron housing oiled from exterior.

Self-Lubricated. Pumps are fully enclosed, with gears, crosshead and connecting rod bearings flood-lubricated from oil bath in crankcase. One oiling lasts 4 to 6 months.

Few, Large Parts. Simplicity of design and few, sturdy parts of best materials, have been GASO characteristics from the start.

Versatility. Interchangeable liners of any material specified, valves of any type desired, pistons, rings and piston rods of any materials specified,—suggest the versatility of GASO Pumps.

Replacement Parts that FIT. All parts are machined carefully to jigs, insuring accurate fit of any and all replacement parts.

Tests. Fluid ends are tested at hydraulic pressures of twice their working loads, and pumps are run under working load conditions before shipping to insure that all parts are properly adjusted.

This tells only part of the story of GASO merit. Engineers are invited to send for our catalog, or refer to

GASO Section, 1937 Composite Catalog

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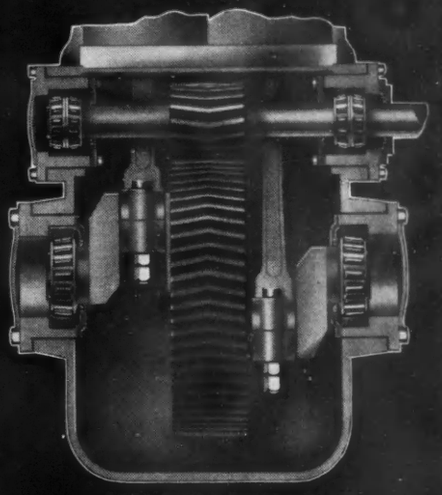
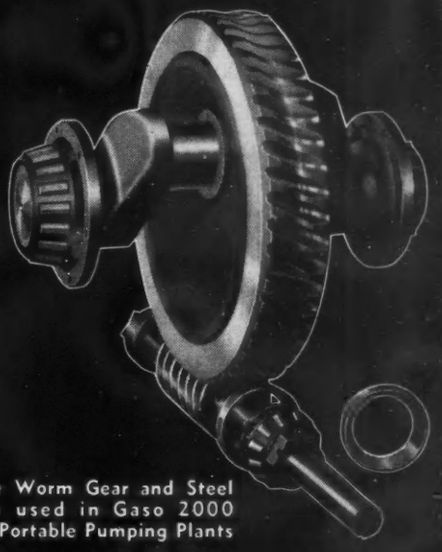
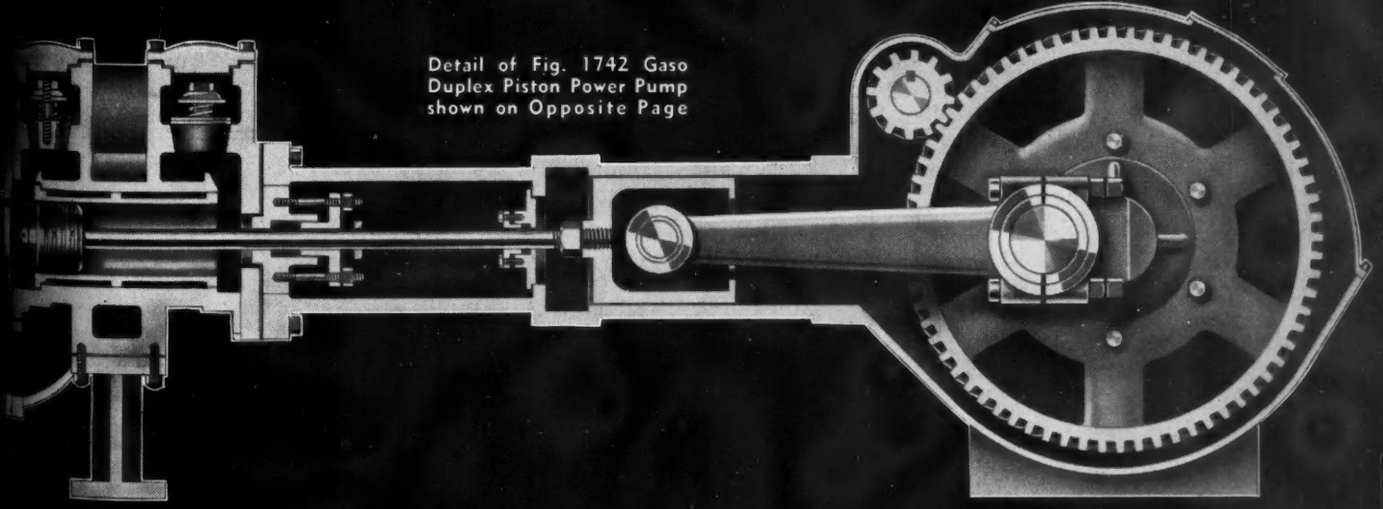


Detail of Power End, Gaso 1700 Series Duplex Piston Power Pumps



Bronze Worm Gear and Steel Worm used in Gaso 2000 Series Portable Pumping Plants



Detail of Fig. 1742 Gaso Duplex Piston Power Pump shown on Opposite Page

MANY FACTORS MUST BE CONSIDERED IN OPERATING

Pipe Lines

By BRAD MILLS, Associate Editor

THE pipe line and its necessary accessories represent the principal connection between production and consumption of petroleum products. The operation of a network of pipe lines necessitates an extensive construction, maintenance, reconditioning and good will program that was not an important part of early pipe line systems. The pipe line of today must compete with transportation agencies that do not derive the bulk of their revenues from one basic industry, but in low cost and efficiency it easily outranks its nearest competitor.

Costs are High

A large, high-pressure pipe line often costs more to build than a railroad. The cost of the pipe usually represents more than half of the total line cost, but the nature of the country and other factors are important. The largest and costliest pipe lines carry natural gas, and the construction cost, as a rule, is considerably less for the smaller oil lines. The cost of building a high-pressure, 24-inch pipe line may exceed $50,000 per mile, where the country is rough, cost of the right-of-way excessive, and booster stations are considered as part of the lines. The cost of 24-inch pipe alone is about $32,000 per mile, while 20-inch pipe of high-pressure type costs about $23,000 per mile. The total cost of laying a 12-inch, high-pressure oil line approximates $25,000 per mile, where booster stations and accessories are included. All construction costs vary sharply with changes in topography and variations in specifications.

Pumping stations add greatly to the cost and maintenance of pipe line systems. The number of these booster stations is determined by the viscosity of the oil and topography of the country traversed. The average distance between pumping stations in Mid-Continent, Gulf Coast and Eastern districts is about 40 miles, with 25 miles and 60 miles representing normal extremes for these territories. The average distance between stations in California is about 15 miles, due to the viscous nature of the oil handled and the rugged territory involved. In extreme cases, the distance between stations is less than two miles, while a distance of almost 100 miles has been negotiated between pumping stations. In pumping oil up a long incline, booster stations must be placed at frequent intervals. After passing over the summit, few, if any, pumping stations may be required.

Natural gas often comes from the producing formation at a pressure that will send it to its destination without help, but such an ideal condition is the exception rather than the rule where consumption is large and the distance great. Booster stations may be placed farther apart along gas lines than along the average oil line, the frequency of the stations depending on the requirements. One of the largest gas lines in the world connects the Texas Panhandle with Chicago and dozens of other industrial cities in the middle west, and the pressure maintained is higher than was carried on small lines of 20 years ago. Panhandle gas is pumped into this great carrier at a pressure of 700 pounds, and it is possible to deliver more than 200,000,000 cubic feet of gas daily through the 800-mile line that terminates near Chicago. Compressor stations are located along the line at intervals of 75 miles, the pressure drop being rapid in a line of this size. Each booster station picks up the gas at a pressure of about 450 pounds and discharges it at the original pressure of 700 pounds.

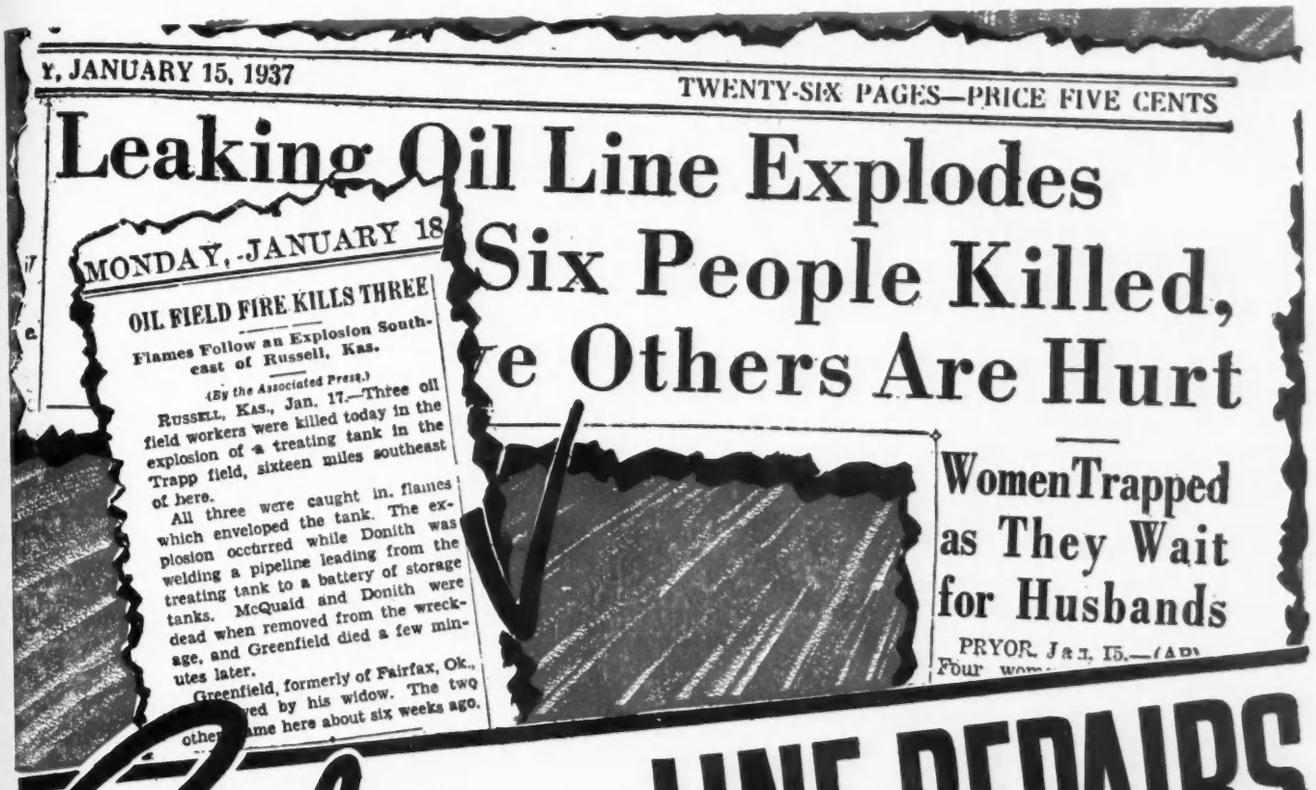
The construction, operation and maintenance of oil and gas lines are similar, but the action of oil and gas in a line is not the same. The restless and compressible nature of gas makes it more difficult to handle than oil.

Capacities Vary

"Capacity" usually means the amount of oil or gas that can be pumped through a pipe line under the maximum safe working pressure of the pipe. With a good grade of pipe and a high line pressure, a six-inch line will carry about 20,000 barrels of high-gravity oil daily. Under the same conditions, a 12-inch line will carry from 50,000 to 60,000 barrels daily. Topography, pumping equipment, temperature and other factors affect the capacity of a pipe line.

The capacity of oil and gas lines is an interesting economic and operating consideration. The quantity of oil a long line of given size will carry depends on several factors. The gravity and viscosity of the oil, distance between booster stations, and pressures maintained at different points along the line affect movement of oil within the line. When oil is pumped through a pipe line, the point of greatest pressure obviously is the point in the line nearest to the pump. The pressure drop along the line continues at a uniform rate, the pressure decline at a point 25 miles from the pump being exactly half as great as at a point 50 miles from the pump.

In a six-inch line carrying 40-gravity oil at a rate of 200 barrels per hour, the normal pressure drop is 4.8 pounds per mile. This means simply that oil started from a pump at a line pressure of 640 pounds would show a line pressure of only 400 pounds at a point 50 miles from the pump. The pressure drop


Y, JANUARY 15, 1937 TWENTY-SIX PAGES—PRICE FIVE CENTS

Leaking Oil Line Explodes

Six People Killed,

e Others Are Hurt

MONDAY, JANUARY 18

OIL FIELD FIRE KILLS THREE

Flames Follow an Explosion Southeast of Russell, Kas.

(By the Associated Press.)

RUSSELL, KAS., Jan. 17.—Three oil field workers were killed today in the explosion of a treating tank in the Trapp field, sixteen miles southeast of here.

All three were caught in flames which enveloped the tank. The explosion occurred while Donith was welding a pipeline leading from the treating tank to a battery of storage tanks. McQuaid and Donith were dead when removed from the wreckage, and Greenfield died a few minutes later.

Greenfield, formerly of Fairfax, Ok., ...ed by his widow. The two ...ame here about six weeks ago.

Women Trapped as They Wait for Husbands

PRYOR, Jan. 15.—(AP) Four wom...

Safety IN LINE REPAIRS

Is a Feature of the G-B

ROLAGRIP

COUPLING For Plain End Pipe

...the other four workmen still in the hospital was "satisfactory."

Women Trapped in Car

Reports here said the women, all of them wives of workmen, were trapped in their motor cars as flames leaped up from the pipe line, enveloping their automobile.

The women had driven out to the scene of the work and were preparing to return to their homes with their husbands after the work was completed.

Reports here said leaking oil became ignited from an acetylene torch being used in welding operations.

Bodies of the victims were brought to a funeral home here.

Any length of pipe required can be *quickly* and *safely* installed in the line with two Rolagrip Couplings. The pipe can be cut on the job—no expensive pre-cutting or threading needed . . . No danger of igniting oil or explosions. And the Rolagrip method is so much *faster!* . . . Why not prove it to yourself? It's also the ideal, economical coupling for all tankage connections and temporary lines! Call, write or wire

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for gas is based on an entirely different and a more complicated formula.

Theoretically, doubling the diameter of a line increases its capacity four times, but carrying capacity does not exactly parallel static capacity, due to friction losses. It is more difficult to maintain a high pressure in a large line than in a small line, but the friction loss is correspondingly smaller in the larger line. Working under a line pressure of 800 pounds per square inch, the pumps are designed to deliver through an eight-inch line about 30,000 barrels of oil per day.

Service Life Important

The service life of a pipe line is an important consideration in the operation of this type of carrier. The average useful life of all pipe lines in the United States is impossible to determine, since conditions constantly are changing and operators are not in agreement as to the meaning of service life. A Pennsylvania pipe line laid in 1859 is still in service, but such a long service life is phenomenal and far from representative for even the most favorable soils. Short sections of pipe lines laid in other districts have been known to give less than two years of satisfactory service. The extreme service life range of pipe lines in the past has been from a few years in the most unfavorable areas to 75 years in the most favorable districts. The average service life for the past 60 years probably has been about 25 years, but operators with their own methods for determining service life do not agree on any arbitrary period.

A pipe line laid in southwest Texas in 1902 was uncovered and salvaged in 1934, and the pipe was estimated to have been good for an additional 20 years of service. The line was located in a very dry district that was further favored by a sweet soil. Pipe lines in Wyoming and along the Gulf Coast have in extreme cases given serious trouble in less than two years of service, but only sections of the lines were so quickly affected by corrosive attack. An eastern pipe line laid in 1881 is still in service, but maintenance has become expensive and most of the original line has been replaced.

If every joint of a 100-mile line should give the same service, calculation of service life would be a simple process. No pipe line gives such a uniform service, and it is necessary to apply replacements or extensive repairs against the original length of the line. Theoretically, several companies hold that the service life of a pipe line should be the length of time required for replacements to equal the original length of the line. This rule does not necessarily hold, due to repairs and other complications. In a course of 30 years, it might be necessary to replace short sections of the line twice, while the longer sections remained in good condition. It is claimed by one large pipe line company that replacements in a representative line of considerable length will not equal the length of the line in 50 years, but pipe line history is too short for proof.

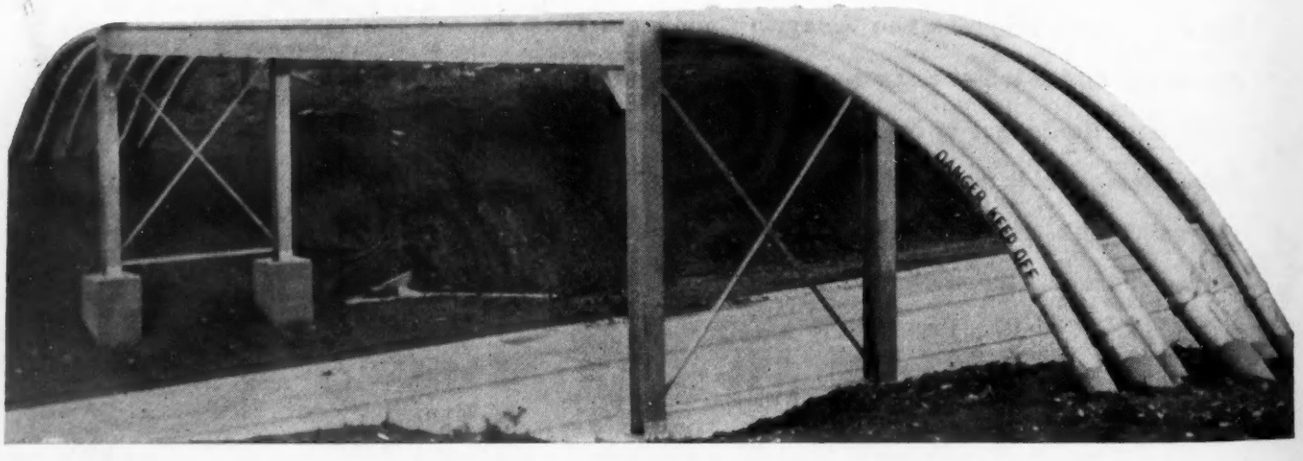
A pipe line between McCamey, Texas, and a gulf point near Corpus Christi, Texas, has been in operation for about 10 years. The line is about 400 miles long and traverses a semi-arid district for about 250 miles, and the entire width of the coastal belt for about 150 miles. Not a single leak or failure has been reported along the 250-mile stretch that includes the inland end of the line. Hundreds of leaks and failures have been reported along the 150-mile coastal section of the line. The trouble diminishes as the distance from the coastal terminal increases, and even beyond the 100-mile post few breaks have occurred. The average service life for this line undoubtedly will be long, despite frequent breaks on the "damp" end of the line that passes through streaks of sour soil.

A pipe line that wears out uniformly and completely at the end of 35 years should be given a service life of 35 years. No pipe line even approaches such a uniformity of service, and service life must remain an intangible phase of operations. Several pipe lines have given serious trouble in less than four years. Such lines either pass through very corrosive soils or carry petroleum products containing excessive quantities of salt water. One company has found it necessary to replace sections of its line regularly every seven years along the Gulf Coast. Experience has given pipe line companies the experience they need in troublesome districts, and replacements often can be anticipated.

The future service life of pipe lines should be longer than the average for the past, due to improved operating practices. Calculation of service life will continue a difficult task, and a uniform accounting method should not be expected.

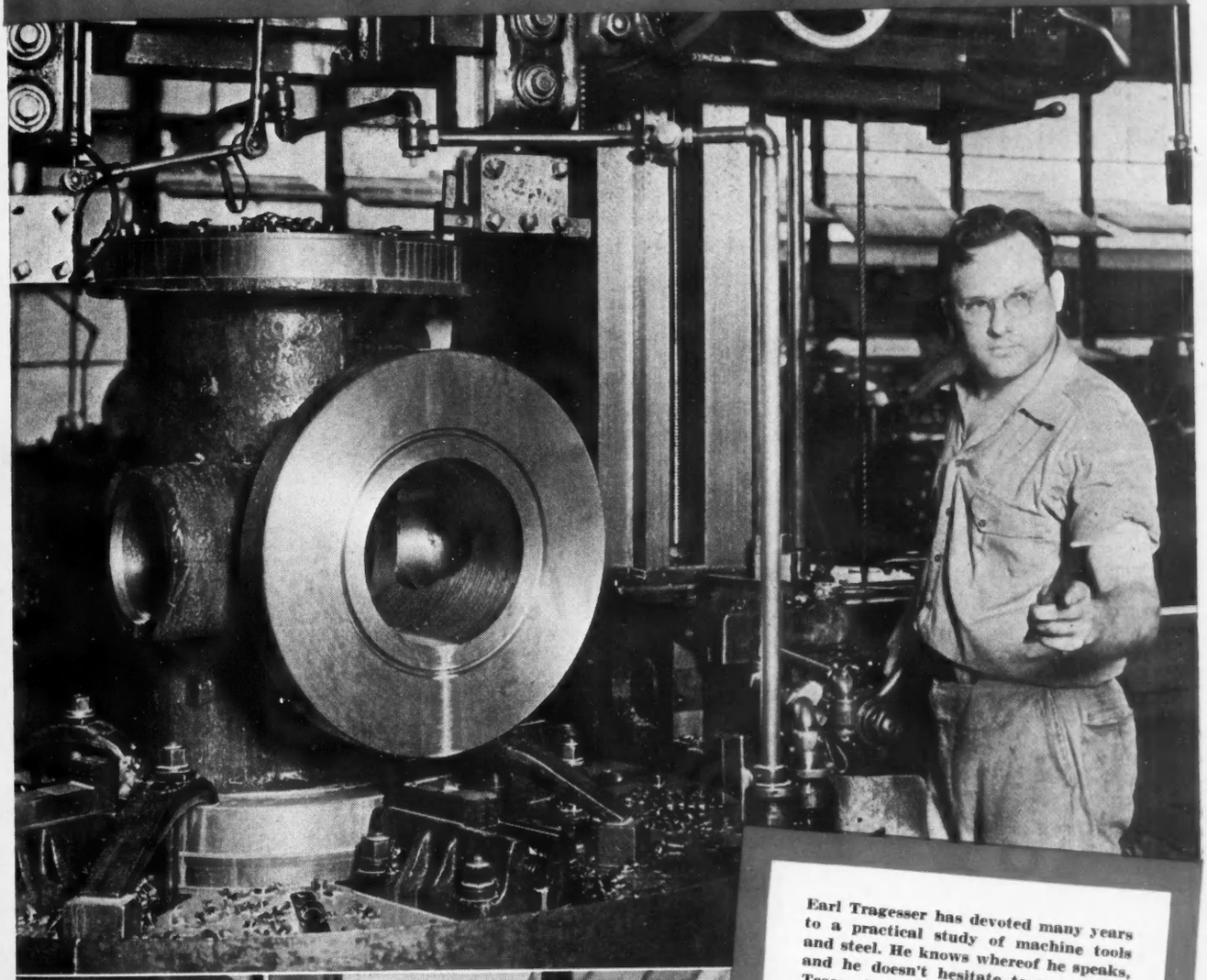
Obsolescence is as much to be feared as depreciation, and it can become the deciding factor in forces that lead to abandonment of a pipe line. The most common form of obsolescence is brought about by depletion or drying up of oil or gas supplies that were available at the time of construction.

A modernistic overpass north of Paola, Kansas. It forms the main trunk transmission line with six welded pieces arched above a recently completed highway.



"Yes, TESCO STEEL *is* GOOD STEEL"

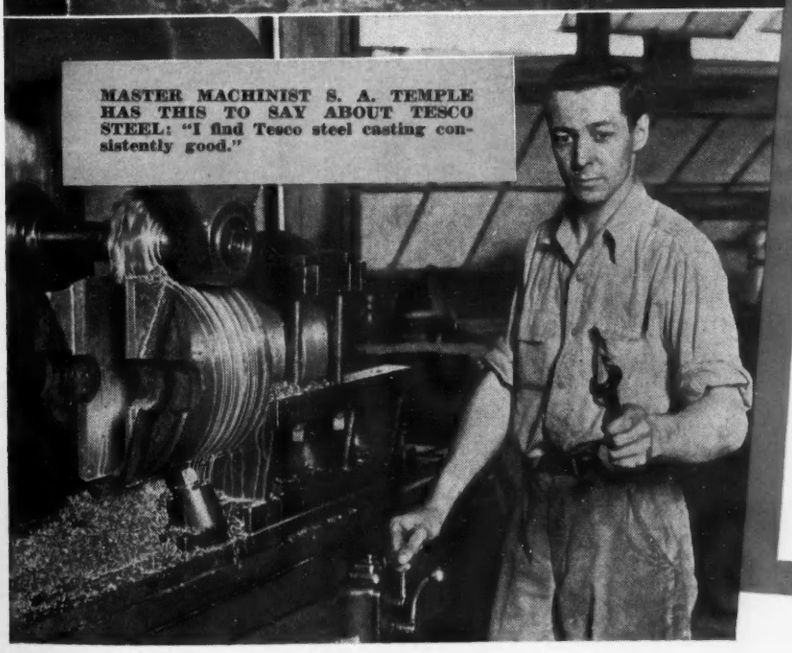
. . . SAYS MASTER MACHINIST L. E. TRAGESSER



Earl Tragesser has devoted many years to a practical study of machine tools and steel. He knows whereof he speaks, and he doesn't hesitate to recommend Tesco steel.

★ ★ ★

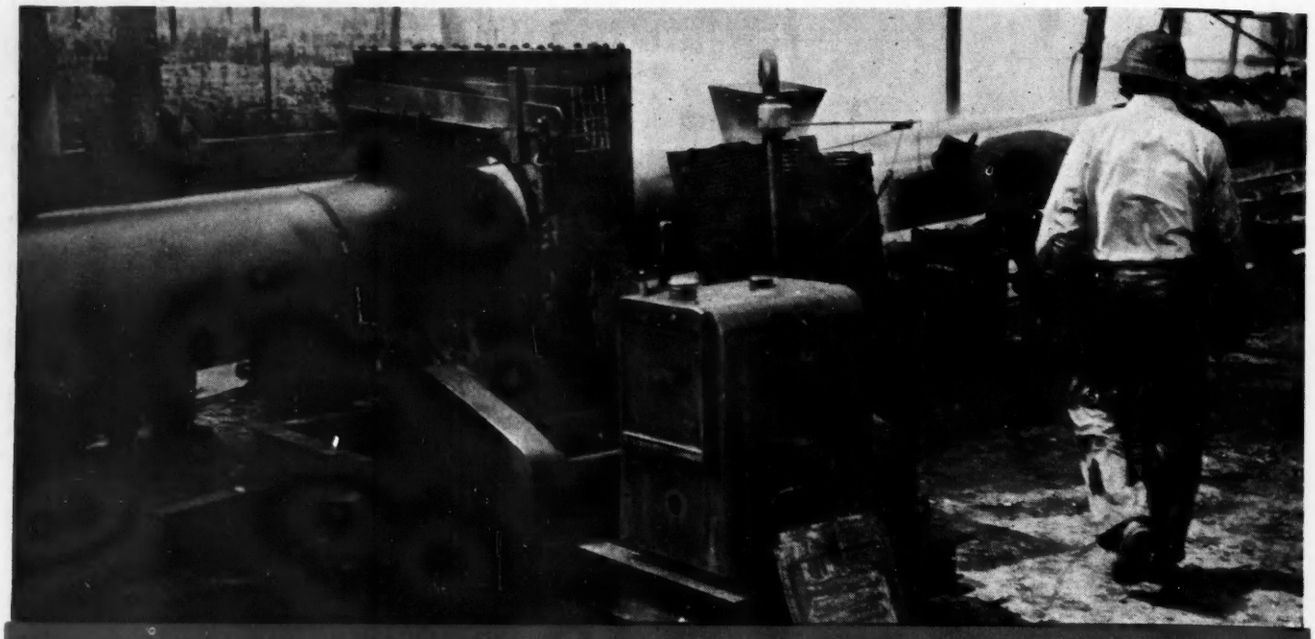
Tesco steel is the product of the only exclusive jobbing steel foundry in the South . . . a foundry in which the latest scientific standards of practice are employed to produce the best possible steel for a given requirement. Tesco metallurgists fully appreciate the severe demands made on steel by all branches of the petroleum industry . . . a feature that is largely responsible for the fact that four out of five oil tool manufacturers on the Gulf Coast are now building with Tesco steel.



MASTER MACHINIST S. A. TEMPLE HAS THIS TO SAY ABOUT TESCO STEEL: "I find Tesco steel casting consistently good."

TEXAS ELECTRIC STEEL CASTING CO.

HOUSTON, TEXAS



Enamel being applied by machine in coating yard on Northern National Gas Corporation job.

Interesting Method Used In Coating a Pipe Line

By W. H. T. THORNHILL, Vice President
Wailes Dove-Hermiston Corporation

RECENTLY, 20 miles of 20-inch O.D. 59.231 pounds per foot steel pipe in double random lengths averaging about 47 feet each was coated for Northern Natural Gas Company in the vicinity of Palmer, Kansas, by a method of procedure in coating pipe lines which is of interest because of its new applications and satisfactory results. It appears to be a step in the march of progress that should have far reaching results toward securing better pipe protection.

It is now well established that proper pipe protection requires not only the best material for the type of protection required, but also proper application. One is as essential as the other. The two go hand in hand. Applying coating material to dirty or wet pipe is, to say the least, exceedingly poor practice and not likely to result in satisfactory performance. It would be equally foolish to paint a house while it was wet from rain or dew.

There is a certain established procedure required for proper application of pipe coating the same as there is for pipe welding in the field, cigarette making, rayon manufacture or any industrial operation. There is always a right way to do it and a wrong way.

The necessary requirements for the proper application of hot pipe coating materials are very few, in principle. The pipe must be clean and dry and completely covered to the required thickness on all surfaces with coating that has been handled in accordance with the manufacturer's instructions. That is basically all that is required.

These requirements are certainly simple enough. However, it has been difficult in practice in the past to follow all them, when coating pipe along the right-of-way under the trying conditions existing in the field because of changing weather conditions and other hazards necessarily involved with the constant shifting of the "site" of the work to follow the contour of the ground.

The method of applying the coating on this job should be of considerable interest to pipe line engineers because of the procedure adopted to overcome the past difficulties.

The pipe on this job was coated with an enamel, followed by an unbonded 15-pound coal tar saturated pipe line felt. The line was made up of a combination of welded field joints and couplings. About half of

Easy and Economical to apply . . .

—Courtesy Lone Star Gas Company, Dallas, Texas

Reproduction of the micrograph above shows the interlocking of the flakes of the internal reinforcement used by Barrett. By laminating with the waterproofing agent, they give Barrett Pipe Line Enamels unusual toughness and resistance to soil stresses.

For pipe of large diameter, The Barrett Company will furnish equipment required to revolve pipe and spread enamel.

FIELD SERVICE

The Barrett Company maintains a Pipe Line Service Department to assist engineers in all coating problems, and also has available Field Service Men, whose assistance is offered where Barrett's protective coatings are used. Inquiries are invited.

EASE OF APPLICATION, even by unskilled labor—under the most severe limitations of field conditions—is an important advantage of Barrett Pipe Line Enamels. Their waterproofing agent is Coal-tar Pitch—processed with all the skill of Barrett's eighty-three years of experience. To this most stable of bituminous compounds, Barrett adds a special flake-type reinforcement in proportions that have proved correct to insure economy that comes from long years of effective protection against adverse soil conditions.

The Barrett Company 40 RECTOR ST., NEW YORK, N. Y.

the joints were connected by each of these two methods.

The enamel used, while a coal tar enamel, had extraordinary properties of resisting wide temperature ranges. It can withstand high temperatures without sagging and low temperatures without cracking. These properties are particularly desirable to meet the exposure conditions surrounding the construction of any pipe line and the expansion and contraction conditions experienced underground in service. It also has better adhesion and will withstand considerably more abuse in handling than the ordinary coal tar enamel.

The coating job was revolutionary in several respects, as follows:

1. The coating of the entire pipe line was done on the job by the manufacturer of the pipe coating.

2. The main body of the pipe was coated by a new and novel end-feed pipe coating machine designed and built to handle pipe up to and including 30 inches in diameter. This work was done in a storage yard having a railroad siding secured temporarily for the purpose at Palmer, Kansas, which was about midway between the ends of the new pipe line. The new coating machine was installed in the yard together with the necessary kettles, skids, water connections and other accessory equipment. The pipe which was cleaned and shop coated at the mill was again cleaned, as required, after delivery in the storage yard, re-primed and then sent through the coating machine.

3. Another feature, new to gas or oil pipe line practice, was that the pipe was coated with the hot enamel only, in the storage yard. No trouble was experienced from damage to the coating in the handling, transportation or unloading in the field. The wrapping was later applied in the field.

4. A further departure from the usual practice was that the coating of the joints in the field was also done by the pipe coating manufacturer who maintained a separate and distinct organization for this purpose.

5. The work was carried out fast enough to match up with the speed of the contractor in laying the pipe so that there were no hold ups from delays in the coating operations. The machine was fast enough to coat pipe at a rate that would always insure a reservoir of coated pipe in advance of the laying contractor's requirements.

6. The price for the entire work was in harmony with prices quoted in accordance with the usual method of the owner purchasing the coating material and having it applied by the laying contractor.

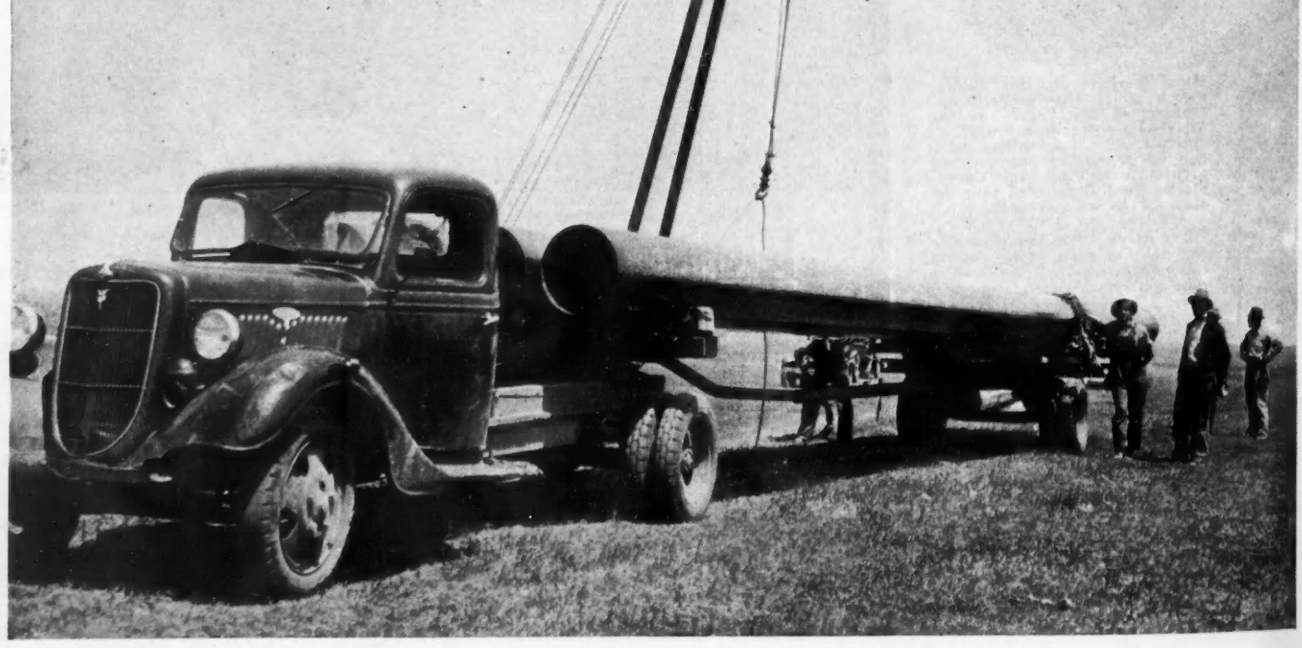
7. The method was of advantage to the laying contractor as it relieved him of all responsibility and attention to the proper coating of the pipe line.

8. The pipe coating was tested with a holiday detector in the storage yard and again in the field just prior to the application of the wrapping. This insured absolute certainty that the pipe coating material was intact and free of holidays, pinholes, carbon deposits or any other defects before the felt wrapper was applied.

At the pipe mill the pipe was cleaned with a cleaning machine and coated with shop coat solution applied by a priming attachment furnished as part of the cleaning machine. This resulted in a fine job of application of the first coating applied to the pipe, which, of course, is essential because if anything is wrong with the shop coat, it is bound to effect the performance of all other coatings that are later on applied on top of it.

As the cars of shop coated pipe arrived at Palmer, they were shifted into the coating yard. The pipe was unloaded by a crane mounted on a truck, and placed on wooden skids arranged so that the pipe could be rolled on the skids up to the center line of the coating machine. As the the pipe was rolled along the skids it was cleaned. Any accumulations of heavy

Truckload of 20-inch yard coated pipe being unloaded in the field.

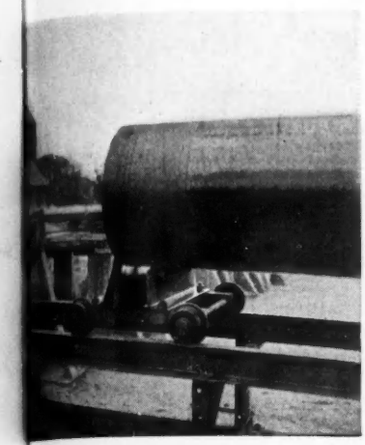


History Is Made At Palmer

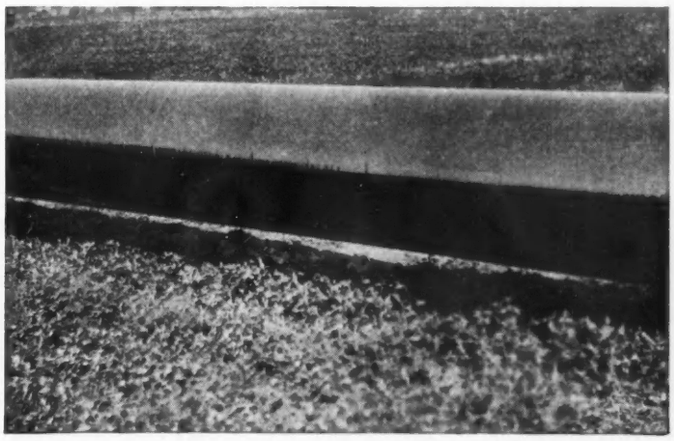
20 Miles of 20-Inch Steel Pipe Machine Coated in Kansas By Revolutionary Method

It is an entirely new method—using an entirely new machine—created by us—for the purpose. Its value was demonstrated beyond all doubt on this job for the Northern Natural Gas Co.

Many years of similar experience in coating water pipe lines (as large as 78″ dia., weighing 12,000 or more pounds per length) enabled us to easily and satisfactorily inaugurate this new method of coating oil and gas pipe lines.



20″ coated pipe emerging from coating machine.



Coated pipe after delivery to field and before unbonded wrapper was applied.

20″ pipe showing coated coupling and wrapping on pipe over 70B Bitumastic Enamel.

These Desirable Features Will Appeal To You

1. *Our own men apply our own coating with our own machine.* One undivided responsibility for all the coating work (yard and field) assumed by the only manufacturer whose products have been made long enough to *prove* their dependability.

2. "Production line" technique is used in coating pipe for the first time. A yard shop is set up, eliminating entirely the hazards of field conditions and minimizing delay due to weather conditions.

3. The machine applies hot Bitumastic Enamel *consistent in thickness* without waste, drips, runs or festoons.

4. It is adaptable—handling pipe up to 30″ O. D.

5. It is versatile—applying the coating alone, or with a single or double felt, or with a ¼″ thickness of Cem-Wrap cement mortar *in one continuous operation.*

On this Northern Natural Gas job, Bitumastic 70B Enamel was applied to the pipe in the yard without wrapping. The coated pipe was easily transported to the right-of-way without appreciable damage to the coating. We then completed the field coating with our own field crew. Then an unbonded asbestos wrapper was applied.

6. The work is fast—supplying pipe well in advance of laying needs.

7. The job is thorough. Coating field joints is also included in our contract. An electric "holiday detector" assures perfect application and makes certain that the coating is intact and free from damage when the pipe line is back filled.

The development of this machine-coating method completes the chain of our service: 1. The manufacture of Bitumastic products of all types for every pipe coating need and condition; 2. Contract work on application of these coatings to any size pipe up to 30″ O. D.; *and now,* 3. Setting up yard shops *anywhere* for the modern method of machine-coating. Prices are strictly competitive.

No Other Coating Material Has Been in Use as Long as Bitumastic. No Other Equals its Performance Record

THERE IS NO SUBSTITUTE FOR EXPERIENCE

WAILES DOVE-HERMISTON CORPORATION

PHILADELPHIA CLEVELAND CHICAGO TULSA SAN FRANCISCO LOS ANGELES

17 BATTERY PLACE, NEW YORK, N. Y.

paint were removed by means of scrapers. Any light rust spots that had developed during transportation were cleaned by wire brushing. Any grease or oil that was found on sections of the pipe was removed by rags soaked in gasoline. Great care was exercised that the gas soaked rags were discarded when they tended to become saturated with oil or grease. All dust and dirt was carefully wiped off. The whole job of cleaning both at the pipe mill and at the storage yard was very carefully supervised and inspected, as proper cleaning of pipe surfaces before the application of protective coatings is absolutely essential.

All pipe was then given a hand-brushed application of priming solution. This was well brushed out so as to avoid runs, festoons or accumulations of heavy primer. The work was very carefully done and particular care devoted to securing complete coverage of a well brushed out priming coat.

The pipe were primed within 4 inches of each end on the outside only. The primer dried by evaporation—and therefore quickly—but the general practice was to not coat any primed pipe with hot enamel until the following day.

The coating machine used was designed for end-feed production in a straight line. By this is meant that the primed pipe passed through the machine in an endless stream. Each primed joint of pipe was attached to a joint already passing through the machine. There was an endless sequence of primed pipe being added at one end for passage through the machine, and coated pipe being removed at the other end after passing through the machine.

A very novel feature of the machine was the positive drive for passing the pipe through the coating operation of applying the hot enamel. This drive, which is patented, insured positive movement of the pipe through the machine at all times. There was no possibility of slippage, which would effect the adequacy of the coating application and interfere with proper wrapping when the machine was used to coat and also at the same time wrap pipe.

As the primed pipe passed through the driving mechanism it passed over a tank containing hot enamel. This was entirely an application tank, and was fitted with suitable burners merely for the purpose of maintaining the proper temperature of the hot enamel, but was never used for melting enamel. The enamel was broken up and fired in separate melting kettles, which were operated under the supervision of a trained expert of the coating manufacturer. As hot enamel was required for replenishment of the material in the application tank, it was withdrawn from the melting kettles.

The pipe passed over the coating tank and under a wide coating nozzle. The hot enamel was pumped from the tank into the coating nozzle and issued from the bottom of the nozzle in a wide ribbon, onto the revolving pipe. A fabric spreader was placed so as to help distribute the coating on the outside of the pipe surface.

The coating was applied in a smooth even thickness of not less than 1/16-inch. This was frequently checked. Because the pipe was revolving as the coating was cooling there was no possibility of runs, festoons or sections of heavy coating occurring on the pipe surface. The coating was found exceptionally even in thickness and smoothness.

Beyond the point of application the coated pipe passed through a water spray to accelerate the cooling of the coating. This permitted prompt handling of the coated pipe on the delivery skids. This water spray was not at all harmful to the enamel, but on the contrary was beneficial.

As the pipe joints passed through the coating machine the enamel was left off at each end of each pipe for a distance of 10 inches to provide bare metal for the field joints. The coating was cut off sharply and with a straight edge at right angles to the center line of the pipe.

After the coated pipe passed through the water spray the joint between the coated pipe and the pipe which was just passing through the machine was broken. The coated pipe was then rolled down onto the padded delivery skids, and was ready for transmission to the field.

A very novel coupling device was invented for quick jointing of the large diameter and heavy pipe joints that were coated by the machine for this job. This coupling worked on the inside of the pipe and securely held the two joints together for passage through the machine. This unique system required only one coupling instead of a multitude of separate couplings. It greatly simplified the operation of the machine and increased production materially.

After the pipe was placed on the discharge skids a holiday detector, operating under about 5000 volts, was carefully run back and forth over the coating. Very few holidays were discovered.

Method Has Advantages

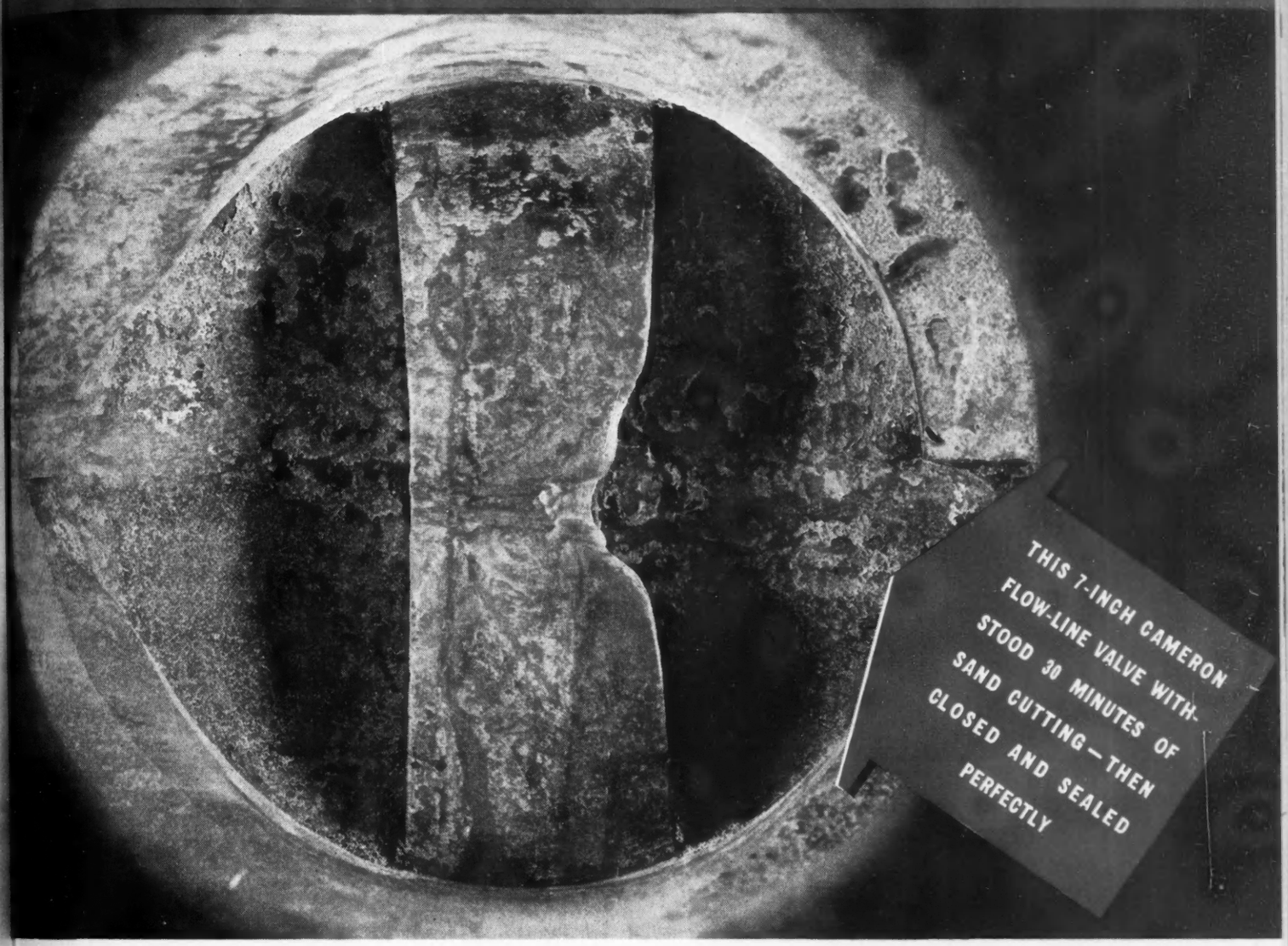
It is obvious that this set-up in a temporary storage yard was practically a "shop." It is further obvious that application by a machine of this type operating in a fixed location in a "shop" should result in a more perfect application. This was especially true on this job, as all the work was done by the manufacturer of the coating, who naturally was more familar with its composition and characteristics and application conditions than anyone else. Obviously, the workmanship was far superior to the kind of application that can be expected in the field by men crawling across country and subject to all the vicissitudes and hazards of weather and field conditions. This is true no matter how careful and how honest and sincere the men are who are attempting to apply the coating in the field.

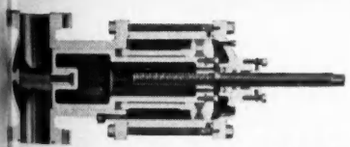
Any delay in the coating work holds up the operations which follow. There are many times in field work when weather conditions permit all subsequent operations, but are such that the pipe surfaces are not in suitable condition to receive the hot coating. For instance, the pipe may be wet in the early morning from dew. This condition would in no way interfere with any of the operations following the pipe coating. The pipe, under such circumstances, however, should never be coated until pipe surface is dry and clean. This naturally would mean a delay in the pipe coating work until the surfaces can be made dry and clean. This might mean several hours. Such a delay often times might hold up all the subsequent laying operations. This loss of several hours is a serious matter to the pipe laying contractor and to the owner as it would naturally delay the ultimate completion of the pipe line.

All this hazard was eliminated by working in a central yard. If, for instance, the pipe in the coating yard was wet in the early morning, operations could be suspended until the pipe was wiped off and allowed to dry, because the machine coated the pipe faster than it could be laved. Therefore, it was always possible, even though coating operations were

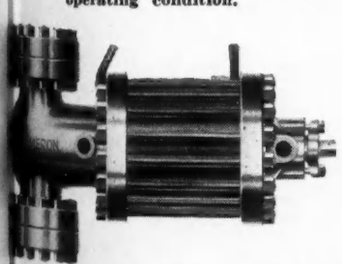
...ust How POSITIVE

is your MASTER GATE VALVE FLOW LINE VALVE ?





...ross section view of the Cameron Pressure ...perated Gate Valve clearly showing the ...ingle seat in the gate cavity and the self-...eeding ram-gate packing element which ...ffects a sure, positive closure under any ... operating condition.



...xterior view of a Cameron Pressure Oper-...ed Gate Valve showing the opening and ...osing ports through which fluid pressure ... applied to control the operation of the ...alve instantly, positively and dependably.

THE UNRETOUCHED PHOTOGRAPH above was taken looking through the ram-gate bore toward the single seat of a 7" Cameron Pressure Operated Gate Valve. This valve was in service on a drilling well in the Gulf Coast area. The photograph shows the results of 30 minutes of sand cutting occasioned by failure to close the valve — for reasons which are not a part of this story. Inspection revealed that part of the seat was cut away and that a ½" deep groove was cut entirely across the remaining section of the seat.

Despite this severe sand cutting, the valve closed instantly and sealed perfectly when fluid closing pressure was applied 30 minutes after the well blew out. The self-feeding packing elements, with which each Cameron Pressure Operated Gate Valve is equipped, instantly fed resilient packing material into the recesses of the damaged seat and effected a leak-proof closure. Undoubtedly the ability of this 7" Cameron Gate Valve to seal off, even though badly sand cut, saved a drilling rig and an almost completed well in this instance.

To operators who do not feel that they could depend upon their present Master Gate or Flow Line Valve for equally positive and dependable performance under adverse conditions, we shall be pleased to forward complete details pertaining to the Cameron Pressure Operated Gate Valve.

CAMERON IRON WORKS, INC.

711 MILBY STREET, HOUSTON, TEXAS

EXPORT OFFICE: 74 Trinity Place, New York, N. Y.
MIDLAND: W. P. (Red) Knight
CORPUS CHRISTI: J. M. (Red) Teague
LOUISIANA: Pelican Well Tool & Supply Company
OKLAHOMA and KANSAS: Carson Machine & Supply Co.
MEXICO: J. W. Allen, Apdo. 542, Tampico, Tamps.

An enamel coated bend being tested with holiday detector, and also showing portion of coating applied in yard and unbonded wrapper being applied in field.

suspended for several hours on account of wet pipe, to start work and have no difficulty in catching up with the daily footage requirements. Furthermore, it was easy to build up a stock or reservoir of coated pipe, which could be drawn upon by the stringing contractor when weather conditions permitted laying but not coating. This further prevented any delay of the laying work.

Men working in a shop doing the same thing day after day become more efficient, and can do a much better job, than would be possible in the field where the coating of each joint of pipe means a constant shifting of the "site" of the work. New conditions often times surround the coating in the field of almost every joint of pipe. There cannot be the same careful attention to details of cleaning and application and also of supervision and inspection that is possible in a coating yard.

Often times heavy rains will turn an otherwise suitable workable spot in the field into a temporary mud-hole or swamp. This makes for a very difficult coating job in handling the pipe and also in making sure that the pipe is thoroughly free of accumulated mud and is entirely dry. "Cavey" ditches often occur, which means rapid working to get the pipe in the ground at all. Coating operations under such conditions are likely to be at the least very uncertain in respect to quality.

No Damage in Transporting

There was some concern that it might not be practical to transport the unwrapped coated pipe from the coating yard to the field without materially damaging the coating from abuse in transportation and handling. The coating contractors had no concern on this score because of previous years of experience in handling coated pipe for water service. This steel water pipe, because of its greater size and heavier weight and other factors, involves considerably more possibility of damage to the coating than exists on any oil or gas line.

The trucks for stringing were equipped with cut-out saddles so that the pipe was kept separated. These saddles were carefully padded with a combination of garden hose, inner tubes and rubber belting. This protection was securely fastened in place so that it did not need renewing after each trip. The coated pipe was placed on the saddles four to a truck load. After loading, the four pipes were tied down to the body of the truck by a chain protected with a fire hose and burlap.

When the truck load of coated pipe arrived in the field the coated pipe was lifted off the truck one at a time by means of a caterpillar tractor equipped with a boom and placed on skids so that the pipe rested on the uncoated ends.

In the field, Truman & Smith, who were the laying contractors, welded adjoining pipe on welding dollies. The weld was then thoroughly cleaned by the field coating crew by hand brushing with wire brushes and scrapers. After the weld was cold it was painted with one coat of priming solution. When this had dried, the weld was coated with enamel applied by the sling method.

Later the pipe was placed on rolling rigs and wrapped by a saddle type wrapping machine which applied the asbestos felt spirally for each length of pipe up to the weld. This wrapper was unbonded but was daubed with enamel every few feet as it was applied.

Then the pipe at the welds and at the ends was wrapped with felt using separate pieces, each long enough to completely encircle the pipe allowing a longitudinal lap of about 3 inches. The lap was sealed with an adequate hand brushed application of enamel.

The wrapping of the welds was done so that about 4 inches at the weld itself was not wrapped in order to permit a soap suds test of the weld later when the pipe was lowered into the ditch and partially backfilled.

When the line was assembled above the ditch the mechanical couplings were installed in position. A copper bond was welded from each pipe to the center ring. The couplings were then coated with a coupling compound by means of a coupling pan. After the pan was removed the uncoated ends of the pipe adjacent to the coupling were coated with the same material by means of a canvas sling. Then a single sheet of felt long enough to encircle the pipe with a lap of 3 inches or 4 inches was placed around the pipe over the coating adjacent to each end of the couplings, and held in position by a suitable daubing of coupling coating. The coated and wrapped pipe line was then lowered into the ditch and backfilled, except at the welds and couplings. These were left open for testing with soap suds while pressure was in the line.

MEN IN THE INDUSTRY'S NEWS

W. R. BOYD, JR., executive vice president of the American Petroleum Institute, New York City, was a Houston visitor early last week. He came to Houston from his farm near Teague, Texas, where he has been vacationing. Late in the week he was in attendance at the National Oil Scouts Association convention in Dallas, where he was one of the principal speakers.

A. M. BLOW, vice president of Amerada Petroleum Corporation, Tulsa, headed a group of officials of the company that visited Houston last week. Included in the party were: A. R. Denison, chief geologist, Tulsa; J. F. Hosterman, geologist, Fort Worth; H. E. Marsh, land man, Fort Worth; and Raymond E. Wiggins, land man, Lafayette, La.

A. H. RICHARDSON, 64, president and general manager of Standard Oil Company of Nebraska, for the last 20 years, will retire July 1. He will remain a director of the company.

H. W. PIERPONT, who has been vice president of Standard Oil Company of Nebraska for eight years, has been elected president and general manager. He succeeds A. H. Richardson, retired.

C. N. MUMPHREY, formerly assistant general manager, has been elected vice president of Standard Oil Company of Nebraska, succeeding H. W. Pierpont, who becomes president upon the retirement of A. H. Richardson.

WILLIAM TWENHOFEL, geologist with Gulf Oil Corporation, has been stationed at Mattoon, Illinois, for work in the Basin field.

ELLIS STALLARD and **W. E. GRIFFIN,** scout and field clerk, respectively, for Carter Oil Company, have also been stationed at Mattoon, Illinois.

R. E. RETTGER, West Texas district geologist for Sun Oil Company, Dallas, departed early last week, accompanied by his family, on a vacation trip to New York City, and will visit points in the Middlewest on the return journey.

GEORGE A. DONNELLY, president of Eastland Oil Company, Fort Worth, and Hugh G. White have formed Hudon Oil Company, which will carry out a development program in Southwest Texas. Donnelly will be head of the new concern, and White is a vice president. Mike A. O'Brien is secretary-treasurer, and Pinkie Herring is geologist.

A **HOUSTON FISHING PARTY** composed of oil men had a very successful day at Freeport, Texas, a week ago. The party caught 51 kingfish and 71 red snappers. Included in the party were: C. A. Russell, production manager, Pan American Production Company; S. M. Stanley, purchasing agent, Pan American Production Company; Jimmie Greathouse and Joe Duncan of Houston Oil Field Material Company, Inc.; J. U. Teague, engineer, Humble Oil & Refining Company, and Lew Staton of Halliburton Oil Well Cementing Company.

CHAS. W. ALCORN, vice president and general manager of Falcon-Seaboard Drilling Company, has moved from Oklahoma City to Tulsa, where the company has maintained headquarters for several years.

BEN G. BARNETT, president Barnett Petroleum Corporation, Dallas, spent the past week in West Texas, supervising the initial operations on three wildcat tests in the Delaware basin area.

W. P. FLOWER, public relations counsellor of Huasteca Petroleum Company, is representative of oil companies in Mexico on the government's tourist attracting committee.

C. G. McLAREN was chosen president of Shell Employes Association at Tulsa last week. Other officers include E. L. Taylor, vice president; Beryl Maupin, secretary and J. G. Proffitt, treasurer.

H. T. RICHARDSON was the speaker at the regular weekly meeting of the Houston Geological Society June 24, and discussed the Goliad formation of South Texas.

J. W. HUNT, scout for The Texas Company in Southeastern New Mexico, is recuperating from an appendicitis operation in a Wichita Falls hospital. He was striken at Hobbs, and transported by plane to the above city.

BRIGADIER GENERAL JAMES G. STEESE of San Antonio, president of Guajillo Corporation, who is attending the Second World Petroleum Congress in Paris, will give some interesting sidelights of the congress in the next or an early issue of The Oil Weekly.

EDWARD L. MORGAN of the New York export office, International Derrick & Equipment Company, is visiting headquarters at Columbus, Ohio, and Eastern fields and will return to New York in the late summer.

JOHN D. ROCKEFELLER'S memory will receive a tribute from the health department of Mexico. The tribute will be in the form of a silver plaque for Rockefeller's aid to science in combatting disease. It will be unveiled soon in Mexico City.

J. H. GOODWIN was chosen president and managing director of British Dominion Oil & Development Company, Limited, when shareholders held their annual meeting in Calgary, Alberta, last week. Other officers are Dr. R. M. Cook, vice president; H. Turnbull, secretary-treasurer; F. H. Whitney, F. D. Mead and T. L. Webb, directors.

DWIGHT C. McCABE, president of the Golden Petroleum Company, has moved from San Angelo to Abilene, Texas, since the company is currently centering its drilling activities in Jones and Taylor counties.

J. H. HENSLEY, Atlantic Pipe Line Company, Pettus, now is with Atlantic Refining Company's geological department in San Antonio.

IRA E. DUGAN, has resigned as deputy proration umpire in charge of the Fitts, Oklahoma, field for the Oklahoma Corporation Commission, and will engage in general consulting work. He has opened offices in the Cummings Building, Ada, and will handle geological, valuation and proration work, as well as petroleum engineering or production engineering, and other special reports. Dugan was placed in charge of Fitts proration matters at its beginning several years ago.

J. K. KEPLEY has offices in Corpus Christi and commutes to Laredo. Recently he bought a plane so that he can make quick trips to his Laredo home. Kepley Production Company has production in the Mirando and Gulf Coastal districts.

PAUL E. ROMINE, Gulf Oil Corporation, Mattoon, was named czar of the Illinois Oil Scouts when the group held its organization meeting in Mattoon, Illinois, June 22. Other officers are A. C. Black, Phillips Petroleum Corporation, Mattoon, assistant czar; N. W. Engel, Superior Oil Company, Mattoon, secretary-treasurer, and E. C. Malroney, Shell Petroleum Corporation, Effingham, and W. R. Wilson, Jr., Pure Oil Company, Olney, members of the executive committee. Other members of the organization are Don W. Cameron, William Cartmell and C. C. Stallard, Carter Oil Company, and W. B. DeMars, The Texas Company, all of Mattoon; A. H. Emmerson, Sun Oil Company, and E. C. Malroney, Shell Petroleum Corporation, both of Olney; W. K. Brewster, Magnolia Oil Company, Decatur; V. H. Welch, Amerada Company, Centralia; C. C. White, Ohio Oil Company, Mt. Vernon, and P. P. Wolcott, Adams Oil & Gas Company, Patoka, and the officers.

FRANK FISHER, of the Kansas geological staff of the Atlantic Oil Producing Company, is vacationing in Colorado and Utah.

H. S. DIEM, vice president of the Olson Oil Company, maintaining offices in Hutchinson, Kansas, has moved to Wichita, Kansas.

GEORGE R. PINKLEY, with Fohs Oil Company, South Texas, has returned to his office in San Antonio after a vacation of several days.

DIED:

W. HUGH JOHNSON, assistant treasurer for Magnolia Petroleum Company, was drowned June 21 while alone in a skiff on White Rock Lake, near Dallas. He was a native of Corsicana, and had resided in Dallas since entering the company's services in 1914.

DR. P. S. GRIFFITH of Houston, one of the old timers of Gulf Coast wildcatting, died at his home last week after an illness of several months. Dr. Griffith, born

in 1862 in Marion County, Tennessee, took an M. D. degree from Vanderbilt University, but eventually found wildcatting more to his liking. He was often associated in business matters with R. E. Burt of Houston, another independent operator. During his later years Dr. Griffith was highly interested in commercial application of radio-electric machines.

JOHN CARTER, scout, Tide Water Associated Oil Company, San Antonio district, died in a Houston hospital June 19 after a long period of illness. His body was sent to Pennsylvania, accompanied by H. Leyendecker, chief scout for Tide Water Associated Oil Company.

World Congress delegates are honored by London clubs

Members of the Institution of Petroleum Technologists in London provided lavish entertainment for American guests attending the Second World Petroleum Congress which convened June 14 in Paris.

Several members of the American group left the Normandie at Southhampton in order to attend the dinners tendered. Included in this group were delegates H. F. Worley, D. E. Buchanan, Gustav Egloff, Prof. V. Ipatieff, C. K. Francis and T. N. St. Hill. E. I. Hanlon and R. W. Byram, associate editor of The Oil Weekly, were included in the invitations extended to official delegates from the Department of State.

More than 200 British oil men assembled for the luncheon given by the Oil Industries Club and the Fuel Luncheon Club at Connaught Rooms. Dr. Egloff was the principal speaker and outlined briefly recent developments in refining processes during which he predicted that 100-octane fuel would soon be available.

Egloff spoke again at the Royal Society of Arts, where he emphasized American development of conservation, especially with relation to production. He pointed to the enactment of numerous conservation statutes throughout the United States as evidence of this tendency.

At an evening dinner in the Craven Hotel, outstanding officials of the British oil companies attended and all American representatives were present. Each American spoke briefly, and the tenor of responses from the British indicated a desire for closer cooperation with America.

Texas University has two oil research scholarships

Austin.—University of Texas announces availability of two fellowships in the Department of Petroleum Engineering, one sponsored by Stanolind Oil & Gas Company and the other by Shell Petroleum Company. These are the first fellowships to be established by major companies at the university, according to Professor G. H. Fancher of the department of petroleum engineering.

Both appointments are open to a graduate of a college or university who is qualified for research. Both prefer for the candidate to have studied petroleum engineering, but in lieu thereof will accept one who has had thorough training in physics, chemistry, and mathematics. The Stanolind fellowship carries a stipend of $1000 for the school year, while the Shell fellowship carries one of $600.

Additional information concerning requirements made of applicants for the fellowships may be obtained from the Department of Petroleum Engineering, University of Texas, Austin.

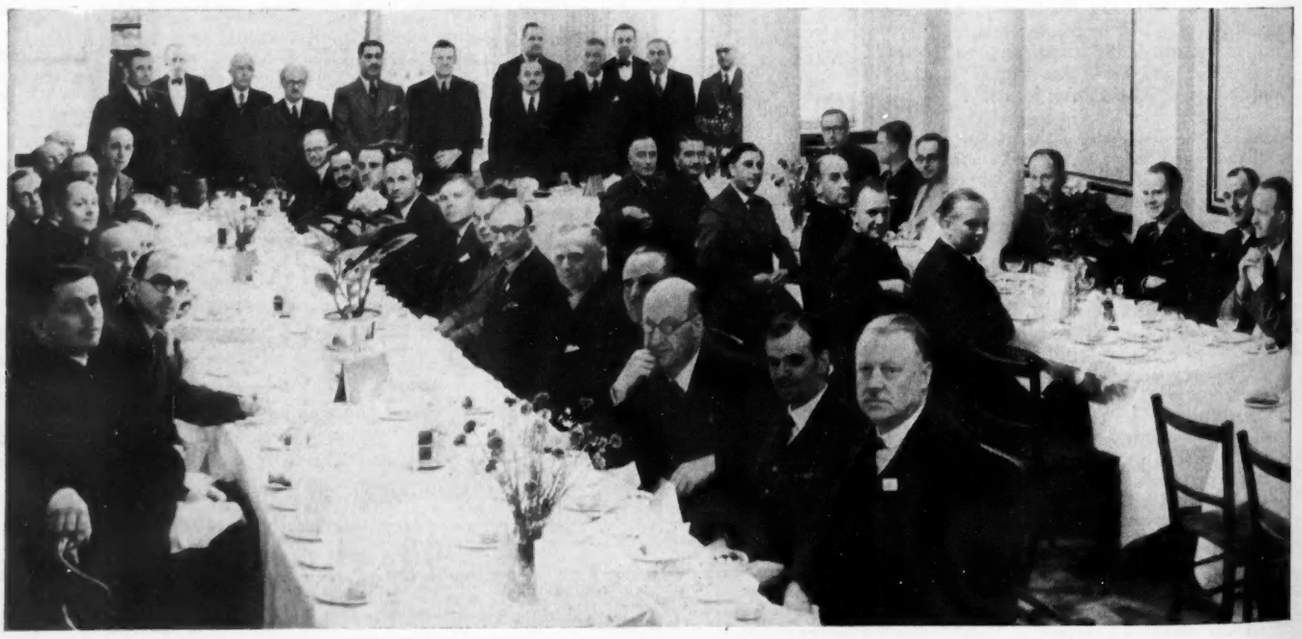
Harrington new head of Ohio-Pennsylvania group

Marietta.—William K. Harrington, president of Henderson Oil Company, Marietta, was named president of the Ohio-Pennsylvania Grade Oil Producers Association at its sixth annual meeting held here last week. He succeeds T. M. Bishop. Charles B. Donahe of Logan, Ohio, was made vice president, and Philip N. Faine, New Straitville, was reelected secretary-treasurer.

Members of the board are: W. Hunter Atha, Atha Oil Company., Zanesville, Ohio; T. M. Bishop, Alexandria, Ohio; Oscar Blackburn, Steubenville, Ohio; H. H. Brown, Wittmer Oil & Gas Company, Pittsburgh; Albert B. Craig, Chartiers Oil Company, Pittsburgh; C. B. Donahue, Kachelmacher Estate, Logan, Ohio; George Eggert, Griffin Producing Company, Lancaster, Ohio; A. E. Faine; W. L. Franka, Gordon Oil Company, Mt. Pleasant, Michigan; J. P. Flynn, Reno Oil Company, Sistersville, West Virginia; L. E. Gregg. Wiser Oil Company, Sistersville; C. F. Huff, Columbus; William K. Harrington, Henderson Oil Company, Marietta, Ohio; H. J. Lowe, Pure Oil Company, Newark; M. S. Lupher, Columbus; John H. McCoy, Keener Oil & Gas Company, Columbus; E. J. Mildren, Marietta; James McCarty, Wehrle Brothers Company, Newark, Ohio; J. J. Schmidt, Ohio Producing & Refining Company, Cleveland; and Charles H. Vaughn, Marietta.

Blue heads independents, public relations group

Tulsa.—A committee on public relations for the Independent Petroleum Association of America has been announced by Chas. F. Roeser, president. Personnel of the committee consists of Burdette Blue, chairman, president of Indian Territory Illuminating Oil Company; F. M. Porter, vice chairman, receiver for Wirt Franklin Petroleum Corporation; E. L. Smith, Dallas, Texas; M. W. Blair, president of United Producers Company, Wichita Falls, Texas, and Rolla A. Clymer, owner and publisher of Eldorado Times.



At the Institution of Petroleum Technologist dinner on June 8 for American oil visitors. The American group shown standing in the rear, from left to right are: H. L. Worley; a waiter; C. K. Francis; James Kewley; D. E. Buchanan; Colonel Old; Gustav Egloff; Ruthven Murray (in rear); Dr. Dunstan; T. N. St. Hill; Professor Ipatieff.

Markets Steadier

GASOLINE PRICE CONCESSIONS ARE VIRTUALLY ELIMINATED

THE oil industry's markets late last week had become somewhat steadier, after having been unsettled for about two weeks because of the reduction in gasoline prices to dealers in the Middle West.

Whereas there was early last week some shading of established prices of gasoline at Mid-Continent refineries, the price concessions virtually had been eliminated by the middle of the week, and the range of prices in the open market was about the same as before the revision of the prices to dealers.

Nevertheless, there remained the adverse effect on refiners supplying jobbers, under marginal contracts, at specified margins under the prevailing prices to dealers, the revision having automatically lowered the prices of the refiners to the jobbers.

The situation early last week was forcing some refineries to make price concessions in order to get business in the open market, and when the sellers later in the week began demanding again the old, established prices, there was a perceptible dropping off of purchases by jobbers.

This gasoline situation still was being watched carefully late last week, and it was still conjectural as to exactly what the ultimate effect on the general price set-up would be.

Some felt that the result eventually might be cutting of retail prices by the dealers, who have been given a wider margin of profit between buying and selling prices.

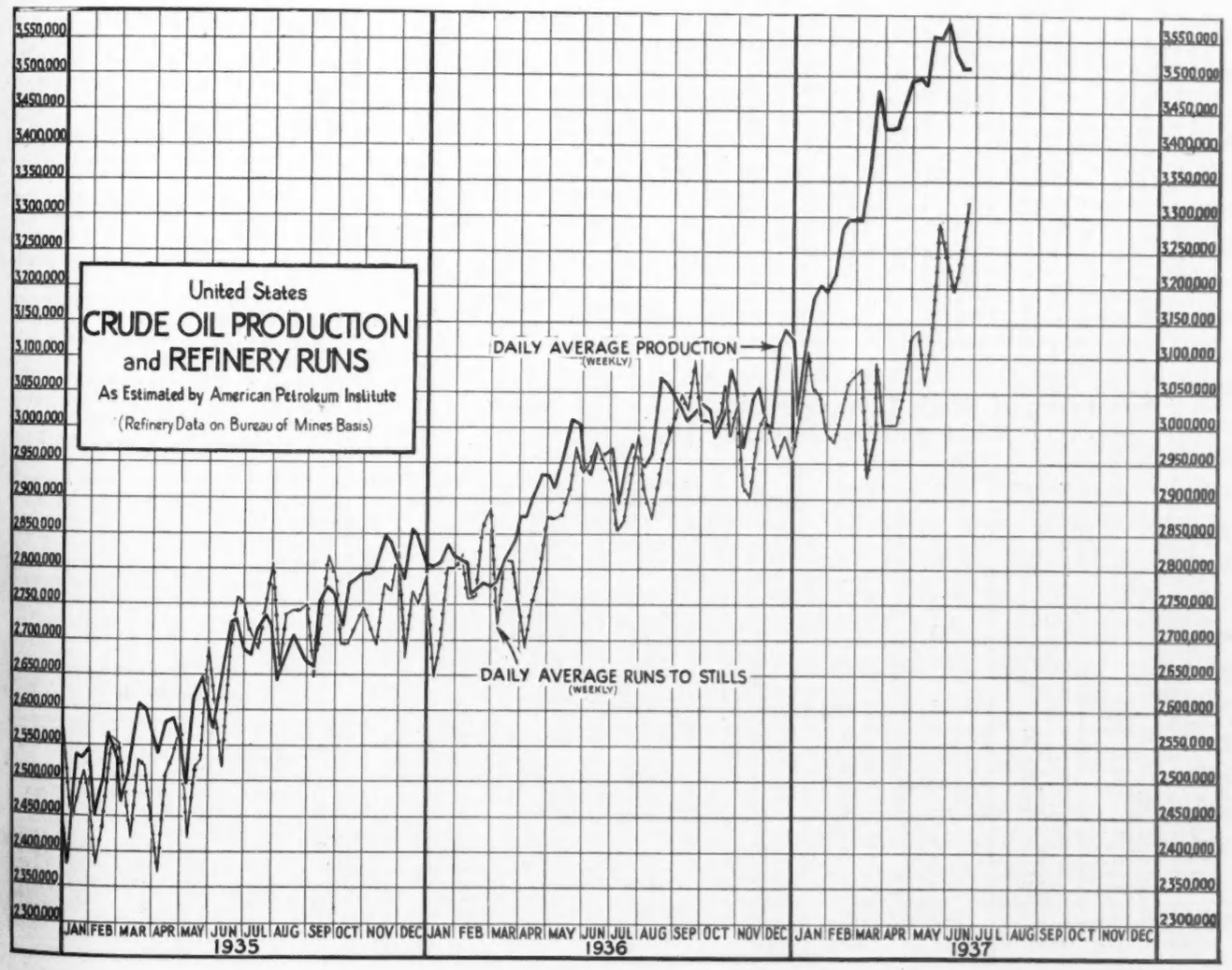
If such a development should materialize, it is stated, it would impair the present tank car market and have an adverse effect on the crude market.

But so far, gasoline retail prices have been well maintained in the Middle West, and in some parts of the country there has been improvement of those prices. In New Jersey, for instance, where prices have been sub-normal for a long period, the gasoline retail prices last week were advanced by many dealers.

Outlook Is Promising

In view of the generally strong situation in the oil industry, the present moderate inventories of gasoline, and the expected heavy consumption of motor fuel this summer, there is good reason for assuming that the gasoline market will remain firm and possibly prove strong in coming weeks.

In the week ended June 19 there was



another material decline in gasoline stocks, and the present inventories do not appear too large, in view of the prevailing high consumption.

It does not seem likely, therefore, that any prolonged weaknesses in the gasoline market will occur, or that prices will yield much if any of the ground now held.

Crude Market Firm

With the outlook for the gasoline market thus promising, and with the present effective control of crude production likely to continue through the next few months, prospects for the crude oil market similarly are good.

In fact, it should not be surprising if the next several weeks bring a revival of the agitation by producers for higher crude prices. There is more than a remote possibility, furthermore, that crude prices will be advanced this summer, although increases do not appear likely before the gasoline market shows further improvement.

While the crude oil market demonstrated inherent strength in the recent increases in postings in East Texas and in the Pennsylvania fields, it further exhibited strength last week when Tide Water Oil Company advanced its posting in Cayuga field, eastern Texas, 5 cents a barrel to $1.03. Oil from the field, around 29 gravity, is said to be desirable because of its asphalt content.

Complete table of prices paid for crude oil at the well in principal fields will be found on page 70, The Oil Weekly, June 7, 1937. Hereafter this schedule will appear only in the first issue of each month.

Mid-Continent Prices

U. S. motor gasoline f.o.b. Oklahoma refineries late last week ranged from 5⅛ to 5¼ cents a gallon for the 62 octane and below, 5½ to 5⅝ cents for the 63 to 67 octane, and 6⅛ to 6¼ cents for the 68 to 70 octane material.

Corresponding prices in the Chicago market were: 4⅞ to 5¼ cents, 5¼ to 5½ cents, and 5¾ to 6⅛ cents.

In East Texas the usual 60-62, 400 end point gasoline was priced at 5¼ cents a gallon.

Kerosene prices f.o.b. Oklahoma refineries ranged from 4⅛ to 4¼ cents a gallon for the 41-43 water white grade and from 4¼ to 4½ cents for the 42-44 water white grade. In the Chicago market prices of both grades were one eighth cent a gallon lower than in the Oklahoma market.

Weekly Trends of United States Production and Stocks

(Figures American Petroleum Institute, except Crude Stocks, Bureau of Mines)

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	Gas & Fuel Oil Stock (Barrels)
January 2, 1937	3,121,400	3,030,000	287,659,000	62,661,000	106,330,000
January 9	3,117,800	3,110,000	286,912,000	65,402,000	105,971,000
January 16	3,184,650	3,045,000	286,044,000	66,559,000	104,841,000
January 23	3,205,150	3,055,000	285,211,000	68,180,000	103,441,000
January 30	3,194,050	2,995,000	285,384,000	69,540,000	102,078,000
February 6	3,220,750	2,980,000	286,116,000	70,535,000	101,136,000
February 13	3,286,050	3,020,000	286,158,000	73,585,000	100,735,000
February 20	3,295,950	3,065,000	287,574,000	74,798,000	99,391,000
February 27	3,296,100	3,085,000	288,121,000	78,786,000	99,534,000
March 6	3,298,800	2,930,000	289,611,000	80,102,000	99,115,000
March 13	3,372,850	2,985,000	290,613,000	81,236,000	98,964,000
March 20	3,448,150	3,095,000	291,555,000	81,623,000	97,287,000
March 27	3,431,300	3,060,000	293,587,000	*83,538,000	96,591,000
April 3	3,422,350	3,005,000	297,374,000	83,157,000	95,805,000
April 10	3,426,300	3,005,000	297,468,000	82,579,000	94,581,000
April 17	3,463,550	3,055,000	298,932,000	82,703,000	94,472,000
April 24	3,496,400	3,125,000	300,737,000	82,303,000	94,100,000
May 1	3,497,450	3,140,000	303,249,000	81,407,000	94,291,000
May 8	3,489,200	3,065,000	304,148,000	81,469,000	94,874,000
May 15	3,551,950	3,135,000	305,365,000	80,378,000	95,316,000
May 22	3,550,450	*3,290,000	304,971,000	79,827,000	95,111,000
May 29	*3,573,000	3,245,000	306,445,000	78,758,000	96,139,000
June 5	3,538,150	3,195,000	307,223,000	77,494,000	97,402,000
June 12	3,515,900	3,250,000	307,199,000	76,996,000	98,158,000
June 19,1937	3,510,950	3,320,000	.....	76,574,000	99,215,000
June 20, 1936	2,963,400	2,950,000	312,344,000	69,214,000	104,728,000

* All-time peak.

Summary of Wells Completed in the United States Week Ending June 26, 1937

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total 1937	Total this Date 1936
Alabama	....	....	....	....	.....	1	2
Arkansas	4	2	....	2	1,550	41	43
California	33	25	....	8	9,290	665	559
Colorado	....	....	....	....	.....	6	6
Florida	....	....	....	....	.....	.....	1
Illinois	2	2	....	....	90	59	4
Indiana	2	....	....	2	.....	58	121
Kansas	55	37	2	16	51,527	1,203	761
Kentucky	21	11	5	5	425	131	125
Louisiana	28	20	3	5	9,627	402	515
Michigan	14	12	....	2	6,950	413	374
Mississippi	....	....	....	....	.....	6	4
Montana	7	7	....	....	406	76	62
Nebraska	....	....	....	....	.....	....	.....
New Mexico	20	18	2	....	29,142	349	268
New York	....	....	....	....	.....	6	.....
Ohio	27	6	13	8	60	703	951
Oklahoma	55	39	2	14	24,054	1,520	1,389
Pennsylvania	3	1	2	....	25	81	.....
Texas	323	247	6	70	340,733	7,233	6,046
Utah	....	....	....	....	.....	....	.....
West Virginia	21	4	12	5	18	435	353
Wyoming	1	1	....	....	288	53	28
Total this week	616	432	47	137	474,185	13,441	11,612
Total last week	617	465	36	116	555,880	....	.....
Total this year	13,441	9,285	1,087	3,069	11,327,718	....	.....

GOVERNMENT OUT

No valid claim to oil land in California

Washington.—Oil lands in Naval Reserve No. 1, now in possession of Standard Oil Company of California, have been lost to the government forever, members of the House Naval Affairs Committee have been told by Attorney General Cummings.

Legislation enacted years ago and the lapse of time have worked to permanently deprive the government of any chance of recovery of the lands, originally patented to the Southern Pacific Railroad as agricultural, found to contain oil and acquired some 10 years ago by the present owner, the attorney general said.

The views of the Department of Justice were expressed in an opinion written in compliance with a request of the committee, submitted through the Navy Department, as to whether there is any chance of reopening the cases brought a number of years ago to recover lands in Reserve No. 1.

The question came up in connection with hearings by the committee on the Walsh bill giving the Navy Department authority to conserve the naval reserves

Comparison of Permits Granted For New Wells

STATE	Week Ending June 26	Total this Mo.	Total this Year	Total this Date Last Year	1936 Year Total
Arkansas	7	24	96	52	103
California	31	139	772	469	1,054
Louisiana	28	100	600	602	1,107
Kansas	44	209	1,298	863	1,873
Michigan	18	108	493	347	762
lahoma	32	231	1,476	1,473	2,594
Texas	285	1,402	8,965	7,283	15,582
Total	445	2,213	13,700	11,089	23,075

Output Up Again

DAILY AVERAGE PRODUCTION TOTALS 3,516,350 BARRELS

UNITED STATES crude oil production showed a relatively small increase of 9000 barrels in the past week, ended June 26, having averaged 3,516,350 barrels daily.

That was 150,350 barrels more than the average daily output estimated by the Bureau of Mines as required by the market during June.

The small increase over the previous week resulted from minor gains in Texas, Kansas, Louisiana, and New Mexico that more than offset slight declines in Oklahoma and California.

Texas Gain Greatest

Texas last week averaged 1,396,000 barrels daily, or 12,900 more than in the previous week and 42,000 barrels a day more than the Bureau of Mines recommendation.

Kansas output was up 4675 barrels at 199,025 barrels daily, and exceeded the federal bureau's estimate of demand 8325 barrels daily.

Louisiana had a gain of 5950 barrels, averaging 259,350 barrels daily, which was 7350 barrels a day more than the allocation.

New Mexico production rose 200 barrels to 114,600 barrels daily, and exceeded the indicated market demand 12,600 barrels a day.

Oklahoma and California Down

Oklahoma last week averaged 632,075 barrels daily, or 125 less than in the previous week and 6775 barrels a day more than the indicated demand.

California output was down 6700 barrels at 655,300 barrels daily, exceeding the state allocation 69,400 barrels a day.

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by exchanging lands in Reserve No. 1 with Standard Oil Company or by purchasing or condemning the latter's holdings.

Members of the committee expressed the view that the title to the lands should never have been lost by the government and saw a possibility of regaining the oil properties by litigation. They refused to approve the Walsh bill before exploring those possibilities, foreseeing in its enactment a waiver by the United States of any rights it might still have.

PROBE IS STARTED

Harrisburg. — Pennsylvania legislature's committee investigating the oil and natural gas industry to determine whether it should be placed under state regulation probed into retail sales of gasoline in the Pittsburgh area last week and prepared to resume its inquiry in Oil City and Titusville at the end of this week. Production Costs is the next subject upon which testimony will be taken.

Gasoline dealers and officials of several companies revealed practices followed in Pittsburgh which demoralized the retail branch of the industry, including granting of rebates, discounts, price cuts and differentials, and "preferred lists."

F. H. Ellis, president of the independent Gasoline Dealers' Association of Allegheny County, told the committee that various filling station operators buying in tank car lots at special quantity prices started a price war by undercutting the market three cents a gallon. "My association finally countered with a like cut," he said, "and it was impossible for the big operators to cut further and show a profit. But during the price war everybody lost."

United States Crude Oil Production

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in June)	ACTUAL PRODUCTION: BARRELS DAILY FOR WEEK ENDING June 26	June 19
TEXAS—			
Texas Panhandle	.....	84,300	75,700
North Texas	.....	72,400	71,600
West Central Texas	.....	33,100	33,000
West Texas	.....	195,700	193,600
East Central Texas	.....	120,800	120,900
East Texas Field	.....	466,100	464,800
South Texas	.....	232,100	228,800
Texas Gulf Coast	.....	191,500	194,700
Total Texas	1,354,000	1,396,000	1,383,100
OKLAHOMA—			
Oklahoma City	.....	147,075	142,950
Seminole Area	.....	122,950	126,175
Crescent	.....	9,850	9,675
Lucien	.....	15,500	15,750
Fitts	.....	93,500	97,900
Edmund	.....	20,500	20,250
Moore	.....	14,750	15,250
Others	.....	207,950	175,600
Total Oklahoma	625,300	632,075	632,200
KANSAS—			
Ritz-Canton	.....	5,625	5,575
Chase	.....	9,650	7,075
Hollow-Nikkel	.....	2,875	2,900
Sedgwick	.....	4,350	4,325
Burrton	.....	14,475	14,250
Lorraine	.....	5,000	4,475
Russell County	.....	30,850	28,300
Silica	.....	20,100	22,650
Others	.....	106,100	104,800
Total Kansas	190,700	199,025	194,350
LOUISIANA—			
North Louisiana	.....	85,050	82,000
South Louisiana	.....	174,300	171,400
Total Louisiana	252,000	259,350	253,400
ARKANSAS	28,300	28,600	28,400
CALIFORNIA—			
Long Beach	.....	59,800	60,500
Santa Fe Springs	.....	45,100	45,000
Huntington Beach	.....	38,200	38,000
Dominguez	.....	25,900	26,000
Inglewood	.....	14,200	16,500
Ventura Avenue	.....	34,800	34,000
Seal Beach	.....	9,300	9,000
Midway-Sunset	.....	73,500	75,000
Elwood	.....	9,100	9,200
Kettleman Hills	.....	79,300	81,000
Mountain View	.....	18,400	18,000
Playa del Rey	.....	8,700	9,000
Wilmington	.....	42,400	43,000
Others	.....	196,600	197,000
Total California	585,900	655,300	662,000
MOUNTAIN STATES—			
Wyoming	51,000	46,600	54,300
Montana	15,400	17,400	17,400
Colorado	4,800	3,800	3,600
Total Rocky Mountain States	71,200	67,800	75,300
NEW MEXICO	102,000	114,600	114,400
EASTERN STATES	118,200	121,200	120,800
MICHIGAN	38,400	42,400	43,400
Total United States	3,366,000	3,516,350	3,507,350

IN THE

Financial Field

Oil company stocks continue their relative favorable position in trading.

* * *

Second quarter reports indicate earnings 50 percent above last corresponding.

THE stocks of oil companies have continued to show exceptional strength in the trading in the markets for securities.

In contrast with the large decline of some stocks, the oil securities in some cases are not very far below their highs of the year.

However, the group as a whole has of course shown a decline.

Last week the strength of the oil stocks was pronounced, these shares moving upward as the market in the first half of the week showed an upward trend.

Earnings Favorable

The creditable performance of oil company shares in the past 3 months of declining prices has been due, apparently, to the favorable situation in the industry and the promising outlook for the rest of this year, with earnings running relatively high and expected to continue so.

For the first half of this year it is indicated that the earnings of all oil companies in the aggregate will be around 50 percent greater than in the similar period last year, or possibly higher.

Improvement Shown

Estimates are being made currently that for the second quarter the oil companies' profits will be approximately 50 percent above those in the corresponding period of 1936.

In the first 3 months the earnings were well above 50 percent in excess of those for the first quarter of 1936. A compilation by THE OIL WEEKLY published May 24, 1937, page 13, showed that for 26 oil companies the net profit for the first 3 months of 1937 was 80.6 percent larger than for the similar period in the previous year. However, that compilation did not include some of the larger companies, which do not issue quarterly reports. Consequently, the improvement shown for the companies in the compilation was not fully representative of the industry, and a somewhat smaller gain is indicated for the whole industry.

Oil Situation Good

The favorable earnings this year are resulting from somewhat better prices for crude oil and petroleum products, as well as to a larger volume of business, attending the all-time record demand for oils this year.

For the third quarter of 1937, from July 1 to September 30, it is being predicted that oil companies earnings will run higher than for the second quarter. The basis for this prediction is that the third quarter embraces the vacation season, when motoring is at its peak of the year, and when gasoline consumption is greatest.

Markets Are Stable

Meanwhile, the markets continue stable, and there is no indication that prices will suffer any material declines from the present levels, while some expect price improvement this summer.

Another factor encouraging interest in the oil shares is the prospect that this summer will bring unprecedented traveling, a large part of which will be by automobile and buses. It is stated that the public is in the mood and the circumstances to spend considerable money this summer on vacation, and the oil industry will profit by this situation.

Financial information that became available last week included that on the declaration of dividends by several companies, and additional reports on earnings.

Consolidated Oil

Directors of Consolidated Oil Corporation have declared an extra dividend of 10 cents a share, in addition to the regular quarterly dividend of 20 cents a share.

Derby Oil

Derby Oil and Refining Corporation for the first 5 months of 1937 reported profit of $262,451, after taxes, depreciation, depletion, but before federal income taxes. This compares with profit of $89,039 for the corresponding period last year.

Panhandle Producing

A hearing is scheduled July 19 in the United States District Court of Delaware on an amended plan of reorganization of Panhandle Producing and Refining Company.

The amended plan provides for the sale of $600,000 principal amount of 5-year 5 percent convertible secured notes, the proceeds of which will be used to pay and adjust the claims of the company's creditors, and to provide about $244,000 for additional working capital. The plan provides also for a change in the common stock to $1 par value from no par, and an increase in the authorized common stock from 300,000 to 1,500,000 shares. It is proposed that each share of the 16,800 shares of outstanding preferred stock will be exchanged for 35 shares of new common stock; and that the old common stock, of which there are 198,770 shares outstanding, will be exchanged on the basis of two old shares for one share of new common stock.

Shell Union

Directors of Shell Union Oil Company June 22 declared an interim dividend of 50 cents a share on the common stock, payable July 15 to stockholders of record July 6. The last previous payment was 25 cents a share on December 15, which represented the first disbursement on the common stock since 1930.

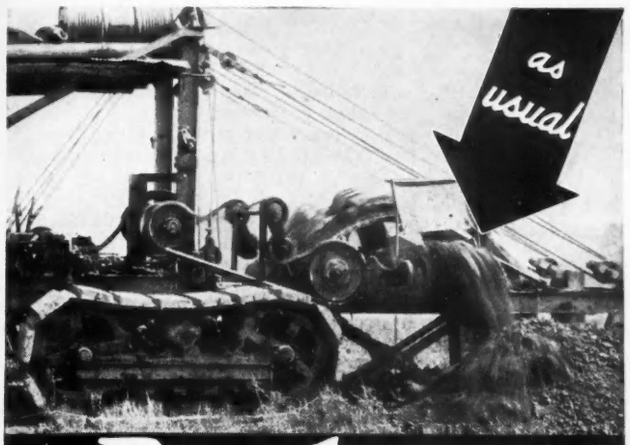
In the connection with the interim dividend the official statement was made that: "The directors considered that the anticipated results for the first half of this year justified their declaring this payment now of $6,535,000 on common stock.

"The dividend declared today gives effect to a policy announced by the company in the annual report of paying, if warranted by the company's position and by the general condition prevailing at the time, an interim dividend at mid-year and a final dividend near the close of the year."

Venezuelan Oil

Venezuelan Oil Concession, Ltd., for 1936 reported gross earnings of £3,363,221, compared with gross earnings of £2,972,119 in 1935. The company's net profit was £1,074,068 for 1936, after drilling, producing, and field expense, office expense, directors' fees, depreciation, exploration reserve, etc. This compares with net profit of £913,018 in 1935.

At the annual meeting of Venezuelan Oil Concession, Ltd., the chairman, Rt. Hon. Viscount Bearsted, stated that the company's general activity probably is on a larger scale than ever before, while costs remain relatively low, because of a policy of economy. The chairman said that prices of oil products in the world market have been running higher this year than last year, but that the better prices have been offset in part by sharp increases in freight rates.



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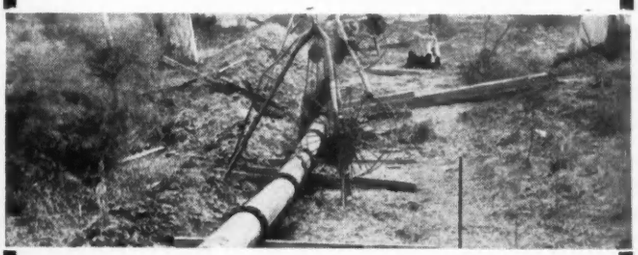

PHOTO shows 12" Mono-Cast Doublex Simplex Pipe being installed in a high-pressure natural gas transmission line where a substitute for cast iron pipe failed after having served only 6 to 12 years. Concerning the replacement with Mono-Cast Doublex Simplex Pipe, the customer writes: "After the installation of this pipe, a test of 250 pounds pressure was put on it and no leakage resulted. To date from every standpoint this pipe has given us complete satisfaction. We are looking forward with pleasure to the installation of more of this pipe at some future date." Mono-Cast Doublex Simplex Pipe sets a new standard for cast iron pipe in gas and oil transmission and distribution. Write for literature.

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Buchanan Speaks

ON NATURAL GASOLINE AT WORLD PETROLEUM CONGRESS

By R. W. BYRAM, Associate Editor

Paris, France. — Natural gasoline plants are an important factor in a complete conservation program it was declared by D. E. Buchanan at the Second World Petroleum Congress here. Buchanan is from Tulsa, Oklahoma, and is president of Hanlon-Buchanan, Inc., and also chairman of the official American delegation named by the United States Department of States to the convention.

Buchanan pointed out that in the early days, natural gasoline was treated as a waste product, and was drained from pipe lines transporting natural gas. Even after the collection and use of the product became fairly general, no particular effort was made to extract the gasoline other than to permit it to condense in coolers. Up until 1911 only 176 plants had been constructed in the United States. In that year they produced 18,565 metric tons. The number of plants continued to increase until 1928, when they reached a total of 1228. That year they had a capacity of eight million gallons daily. Although the number of plants have decreased since 1928, totaling but 850 in 1936, the amount of production has increased steadily. In 1936 it is estimated 4,600,000 metric tons were produced. At that time capacity was 10,000,000 gallons daily.

New Developments

Buchanan estimated that there is now invested $250,000,000 in the 850 gasoline plants operating in the United States. As an example he cited one plant in East Texas connected to 2200 wells and returning the residue gas to the leases. The plant is served by 81 miles of gathering systems, and 45 miles of line returns the residue gas. To maintain a 10-inch vacuum on the gathering system at the plant intake, and for compression of the gas to 50 pounds, the operating pressure of the plant, 21 compressors with a combined rating of 3480 horsepower are employed.

He outlined another operation in East Texas which is now being installed where 10 plants will extract 98 percent of the butane content of the gas. The plants process 90,000,000 cubic feet of casinghead gas daily which is gathered from 14,000 wells. They require 533 miles of vacuum gathering lines and return the residue through 322 miles of line.

Beside the butane, these plants will extract a small percentage of propane and the lighter fractions. The gasoline is then gathered through a 60-mile long system and transported through a 300-mile long trunk line to a Gulf Coast refinery.

Until proration became general, gasoline plant construction usually followed the trend of drilling. If a new field was drilled quickly, plants were constructed rapidly. In many instances the oil reserve was insufficient to support the plants, and in other cases the plants were inadequate to handle the supply.

However, under proration, it is possible to determine with relative accuracy the size of the plant needed to handle the demand, and an assured supply of casinghead gas may be expected. Buchanan pointed out that this condition "has the effect of discouraging the construction of many small plants and delays the construction of the larger ones with the result that plants built today are upon a more secure economic foundation than in the days of hit and miss."

Ability of plants to eliminate propane through improved processing has also done much for the industry, he said.

"The application of selective fractionation or 'stabilization,' which reached commercial proportions in 1925-1926, was one of the most important developments in the industry . . .

"With improvements in the cracking processes, total cracking capacity increased rapidly. This development was followed by numerous and widespread vapor-lock complaints from the motoring public." Stabilization solved this problem.

"It is safe to say that 'stabilization' of natural gasoline and refinery vapors has had a profound influence on the upward trend of motor fuel volatility because the elimination of propane and iso-butane has made possible the incorporation of larger percentages of normal butane, a very desirable constituent of motor fuel in proper proportion."

Oil Scouts Meet

DALLAS SCENE OF ANNUAL NATIONAL CONVENTION

Dallas.—Oil scouts from the Mid-Continent and Gulf Coast territories gathered in Dallas June 24, 25 and 26 for the fourteenth annual convention of the National Oil Scouts Association of America, Inc.

J. Ben Critz, vice president and general manager of the Dallas Chamber of Commerce welcomed the delegates. President Charles Strahan responded. W. R. Boyd, Jr., executive vice president of the American Petroleum Institute, spoke on the conditions of the oil industry. A discussion by Bruce Barkis, Lane-Wells Company, on recovering cased off production and its effect on national oil reserves concluded the morning session June 25.

The Saturday session was opened with E. F. Stratton discussing water flow locations by means of photo-electric surveys. K. B. Nowells talked on water flooding, and James D. Hughes, Eastman Oil Well Surveying Company, discussed directional drilling methods.

Only through the encouragement of private initiative as expressed through industry can high social and economic standards of individual and national life be maintained, W. R. Boyd, Jr., executive vice president of the American Petroleum Institute, asserted in an address at the annual meeting. Calling attention to the general lack of understanding on the part of the public of the great contributions to national progress made by the petroleum industry, he urged that oil men "let Americans know the truth" about the industry.

"The facts will show that the petroleum industry has been managed from the standpoint of great service rather than great profit," said Boyd. "The industry's investment is roundly twelve billion dollars. The industry is owned by several million holders of stocks and bonds. No industry's securities are more widely held, and none presents less opportunity for concentration of ownership or control.

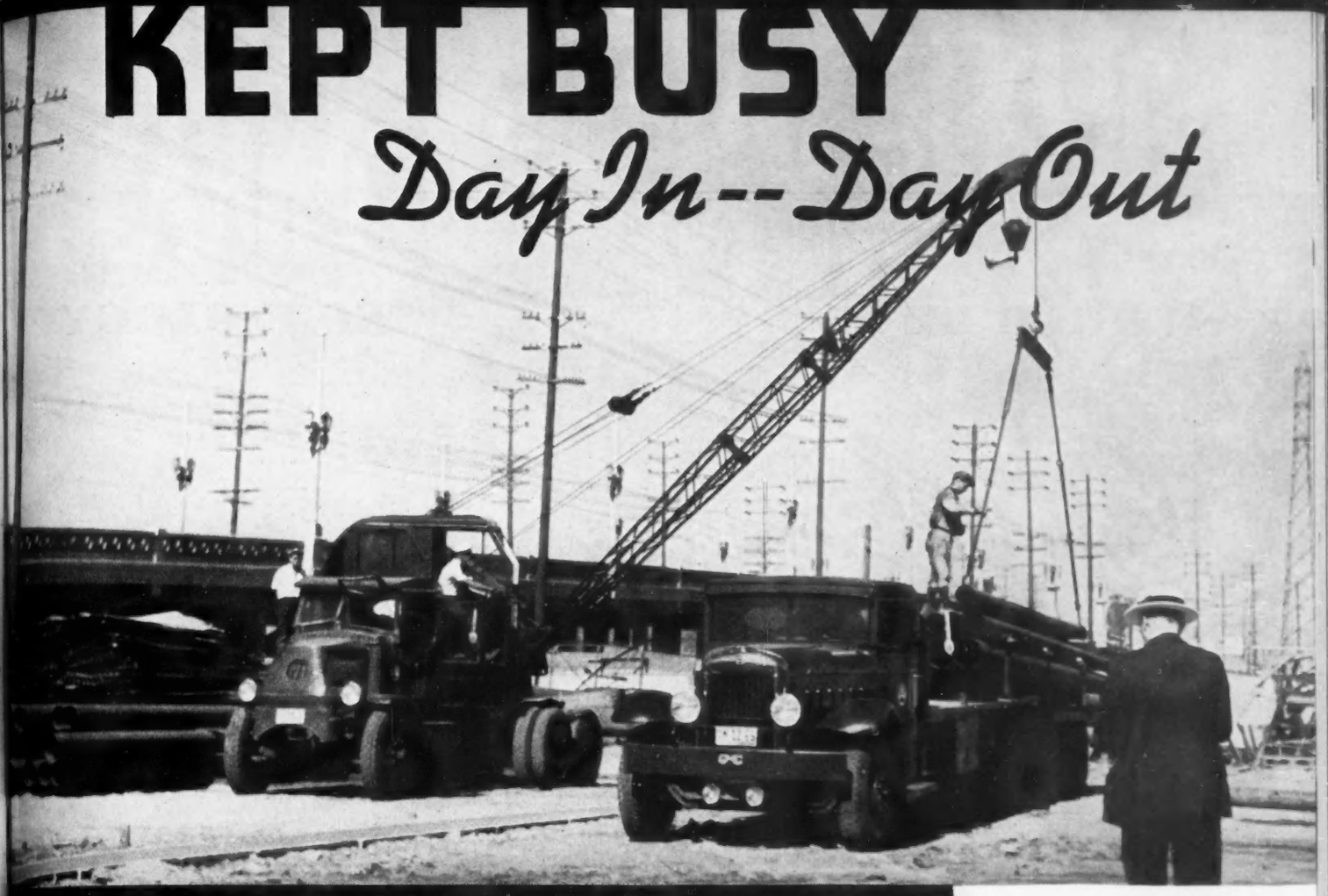
"This industry affords employment for more than one million men and women, to whom it pays wages and salaries totaling about one and one quarter billion dollars annually. Employes engaged in production and drilling activities are the fourth highest paid among all workers in non-manufacturing activities. Petroleum refinery wages average 34 percent higher than wages paid in manufacturing enterprises. Filling station employes receive higher pay than the average retail sales workers.

"The activities of this industry are of widespread benefit. More than 325,000 producing wells are owned and operated in 22 states. Refined petroleum products are made in some 638 refineries operated in 35 states. The industry owns and operates more than 112,000 miles of oil pipe line, 150,000 railroad tank cars, more than 130,000 motor tank trucks, enough tankships to constitute about one-fourth of American merchant-marine tonnage, and a large number of canal, river and lake boats and barges. There is scarcely a community where petroleum products are not available. The industry's 300,000 retail sales outlets have become symbols of service.

"Unremitting scientific research and practical experimentation in refining have served the public interest by multiplying the output of refined products, widening their field of usefulness, reducing their cost, and securing adequate supply and satisfactory quality," continued Boyd.

KEPT BUSY

Day In -- Day Out



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It's fully convertible . . . shovel, crane, dragline, pile driver, back filler or trench hoe attachments are made of alloy steels — so simply set up that it's practical to change from one service to another right in the field. The Ford V-8 motor gives it all the power you'll ever need at the lowest operating and maintenance cost ever known in a unit of this kind. Mounted on a truck chassis or on its own tractor-type crawlers, the Bantam Weight's a high speed machine with high earning ability. Write for full information.

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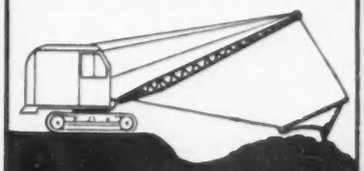
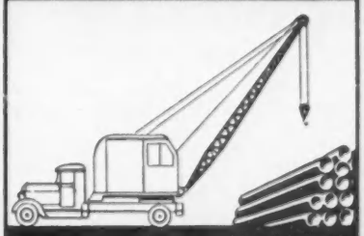
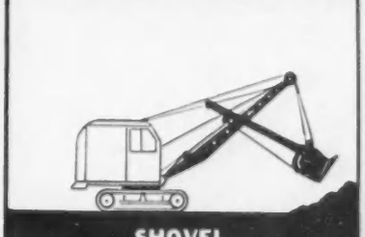


BACK FILLER



TRUCK CRANE



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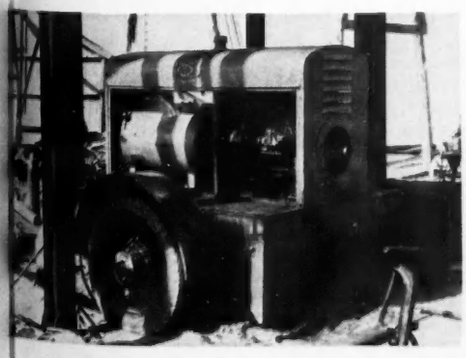

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WORLD DEVELOPMENT and TECHNOLOGY

Edited by
WM. V. GROSS, Associate Editor

Wait for Results

McCOLL-FRONTENAC IS USING SEISMOGRAPH IN TRINIDAD

RESULTS of current seismic and geological surveys being carried on in Trinidad by McColl-Frontenac Oil Company are awaited with considerable interest as it is felt that if the organization is fortunate in locating some high gravity oil exports from the United States to Canadian refineries of that company will be significantly curtailed.

McColl-Frontenac Oil Company produces about 1300 barrels per day of heavy oil in Trinidad, disposing of it on the open market. The company, having accumulated some 35,000 acres of potential oil lands in the colony since 1935, has advanced its operating subsidiary there $1,310,500. Out of 18 tests completed by the subsidiary, 16 have been producers.

Trinidad Growing

At the rate maintained during the first part of the year, Trinidad may be expected to produce slightly better than 15,000,000 barrels in 1937, or better than 13 percent more than the 13,237,030 barrels produced in 1936. Production for the colony through April of this year totals 5,009,221 barrels.

For the past three years the trend of footage drilled and oil produced has been constantly upward in Trinidad. Footage jumped from 351,783 in 1934 to 594,529 in 1936. In the matter of production, the curve for the 1934 total starts at 10,894,363 barrels and rises to 13,237,030 barrels for the 1936 total.

Gaining Momentum

Seismograph application to exploratory work, started in 1935 in Trinidad, is gaining real momentum there in 1937, with the result that a number of new productive areas have been found. It should be stated, however, that most of the increase in the production for 1936 and the indicated increase for 1937 has come from development of the proven areas.

In a thorough report on the petroleum industry in Trinidad, laid before the legislative council May 14, 1937, R. S. Mackilligan, inspector of mines and petroleum technologist, has a number of interesting facts concerning the technical and economic progress made on the island. Abstracts from his report follow:

Steady Expansion

The steady expansion which has been taking place in the petroleum industry of the colony during recent years has continued with increasing intensity. This is due to various reasons, among which world conditions, in general, and the active drilling policy adopted by operators in Trinidad have played an important part. It is desired, however, to draw attention to the successful manner in which operating companies (particularly the larger organizations) have approached the many problems they have encountered in exploring and developing the oil resources of Trinidad. The geological conditions under which the petroleum occurs in the colony are extremely difficult and variable, and it is considered that it is mainly due to the exhaustive research work which has been undertaken by the larger operators, coupled with the skillful manner in which modern exploration and development methods have been generally applied, that the present expansion of the industry has been rendered possible.

Exploration Widespread

In addition to a general increase in drilling operations, wide-spread exploration surveys have been carried out during the past year, and this important work is still in progress. These exploration surveys have included the examination of extensive areas by geophysical methods (mainly gravimetric.)

The total production of crude oil for 1936 amounted to 13,237,030 barrels, which is 1,565,806 barrels or 13.41 percent more than the production for 1935, and is the highest yet recorded in the colony.

It is worthy of note that the increased production has been mainly derived from previously known producing structures and their extensions, and also that the Fyzabad structure contributed 56.7 percent of the total production of the colony. Two new producing areas of promise were discovered during the year, but they are as yet insufficiently developed for their potentialities to be determined, and the quantity of oil produced from them during the period under review is of relative unimportance.

Drilling

During the year 171 new wells were commenced, compared with 139 during 1935. The total number of wells commenced in the colony to the end of 1936 is 2416, of which 1538 are on lands the oil rights of which are vested in the Crown and 878 are on private lands.

The number of feet drilled during 1936 amounted to 594,529, which represents an increase of 158,230 feet, or 36.26 percent on the footage for 1935.

Various companies have undertaken a larger amount of deeper drilling than in former years, and it is worthy of note that at the end of the year there were 19 wells over 6000 feet deep and 7 wells over 7000 feet deep, the deepest being 7673 feet.

The accompanying table shows, comparatively, the number of feet drilled and the quantity of oil produced during the years 1934, 1935 and 1936.

Conservation of Reservoir Energy

Much of the petroleum in Trinidid is associated with considerable volumes of natural gas at high pressures (pressures up to 5000 pounds per square inch having been recorded), and the efficient control and conservation of this natural gas constitutes a problem which is rendered more difficult by the complicated geological conditions which exist. This problem has been, and continues to be,

LAND	Number of Feet Drilled			*PRODUCTION (In Barrels of 35 Imperial Gallons)		
	1934	1935	1936	1934	1935	1936
Crown Oil Rights	256,455	328,510	381,358	6,391,544	7,544,427	8,182,018
Private Oil Rights	95,328	107,789	213,171	4,502,819	4,126,797	5,055,012
Total	351,783	436,299	594,529	10,894,363	11,671,224	13,237,030

* One barrel of 35 Imperial gallons is equivalent to one barrel of 42 U. S. gallons.

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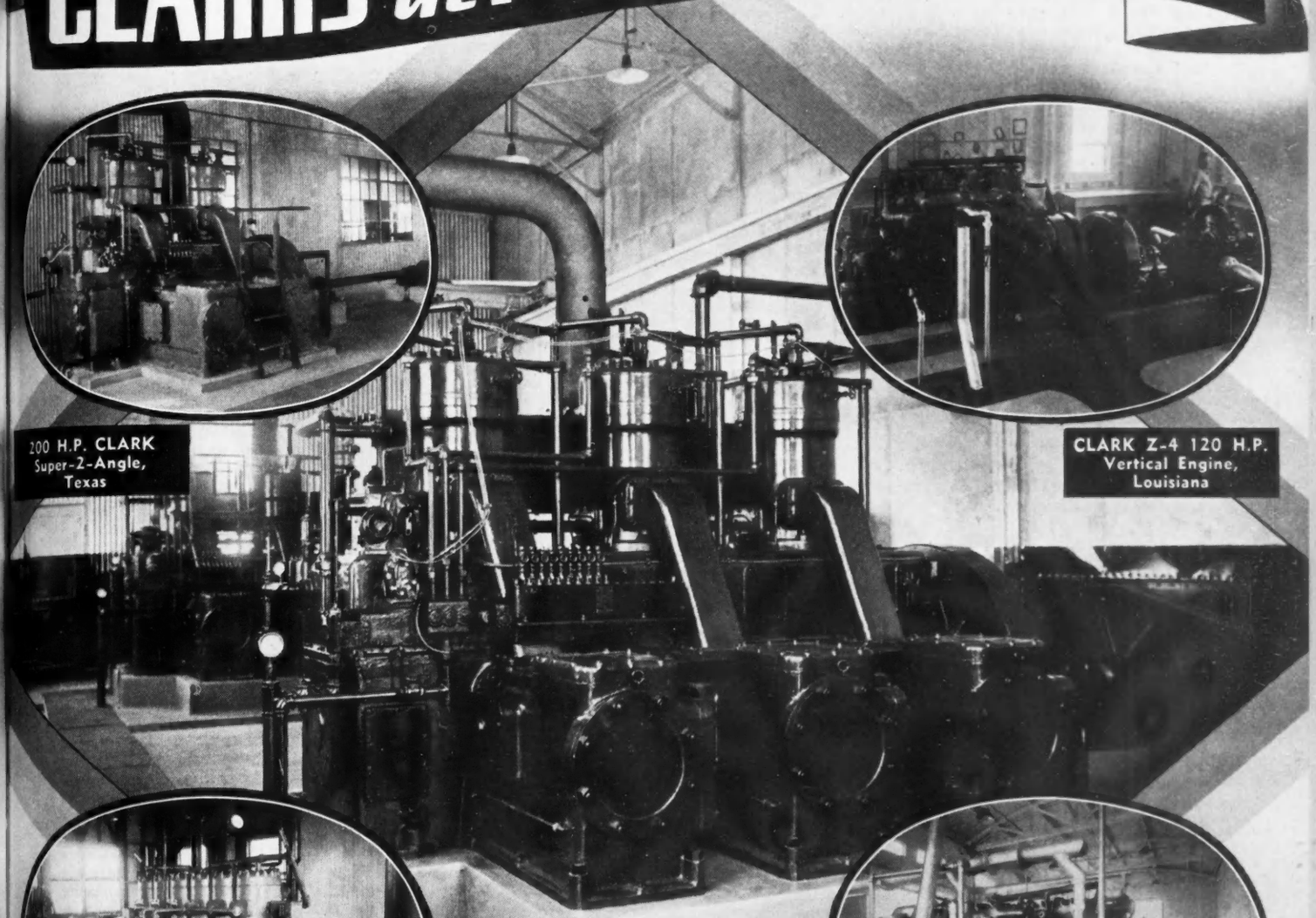
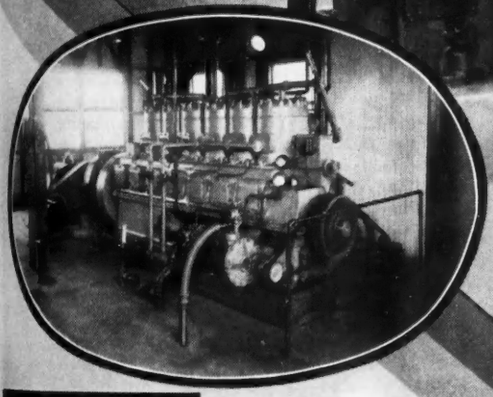
200 H.P. CLARK Super-2-Angle, Texas

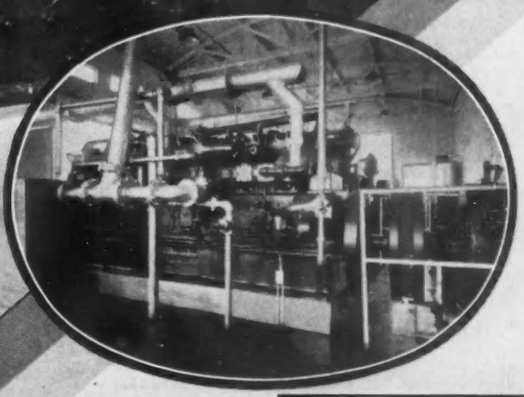
CLARK Z-4 120 H.P. Vertical Engine, Louisiana



2 300 H.P. CLARK Super-2-Angle Gas Engines, Pipe Line Station, New Mexico



CLARK Z-6 180 H.P. Vertical Engine, New Mexico



CLARK Z-8 240 H.P. Vertical Engine, Kansas

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1. **CUTS TRANSPORTATION AND ERECTION COSTS.**
2. **SMALLER FOUNDATION, LESS FLOOR SPACE, SMALLER BUILDING.**
3. **SAVES FUEL, due to CLARK Super-2-Cycle Fuel Injection.**
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the object of careful study, especially by the larger organizations.

With the object of conserving surplus natural gas, some of it is being returned to the formation in three different areas for purposes of repressuring or storage, and it is anticipated that this practice will be extended to other areas where suitable conditions are found to exist.

It is considered of prime importance, however, that the quantity of gas produced with the oil should be reduced to an economic minimum. This important factor is fully recognized by most of the larger organizations who are well aware that on the efficient control and conservation of their gas resources depends the flowing, and perhaps the economic, life of their wells.

Recognizing this, most of them have, for some time past, reduced the gas/oil ratios of the majority of their flowing wells to very low figures, and ratios as low as 400-500 cubic feet of gas per barrel of oil are not uncommon. It is hoped that all operators will recognize the vital importance of this practice and take steps to adopt it without delay.

16 Operating Companies

The number of oil field operators at the close of the year was 16, compared with 14 at the end of 1935. As an indication of the increased activity which took place on the oil fields during 1936 it may be noted that the daily average number of persons employed increased from 6193 in 1935 to 7796 in 1936.

During the year 50 applications for mining leases and exploration licenses were received, and 15 mining leases and five exploration licenses were registered. The total number of mining leases and exploration licenses registered at the end of the year amounted to 54.

Including privately owned oil rights under lease, the area of which has been supplied by the various operating companies, the total area of Trinidad under license or lease at the 31st of December, 1936, was 325,021 acres (27.25 percent of the total area of Trinidad).

The figures given above for crown and alienated lands include licenses and leases actually registered. When the further licenses and leases which have been approved but which have not yet been registred are taken into account, the total area under exploration license or mining lease (including private lands) will be approximately 40 percent of the total area of Trinidad.

Marine Concessions

In the month of June, 1936, the government published a notice stating that it was prepared to receive applications for the grant of exploration licenses in connection with oil concessions over marine areas in the territorial waters of the colony. As a result of this notice nine applications for such licenses were received. The terms and concessions under which concessions will be granted are now under consideration.

Twelve permits for the refining of oil were issued during 1936. Of these permits six were issued in respect of small field topping plants the operations of which are of relative unimportance. The total capacity of the refineries operating in the colony amounts to approximately 17,500,000 barrels per annum. During 1936 a total quantity of 13,028,161 barrels of crude oil was refined, compared with 11,148,285 barrels during 1935.

Three gas absorption plants and one gas absorption plant for the recovery of gasoline from natural gas were in operation during the year.

Four deep-water piers equipped for loading tank steamers with petroleum and its products are in use. Facilities for bunkering vessels in the Harbour of Port-of-Spain are also available.

200 Miles of Line

Approximately 200 miles of main pipe lines have been laid down in the colony. During the year two new permits were issued, the total number of permits issued now amounting to 176.

The total main tank storage capacity for petroleum in the colony is approximately 4,030,000 barrels.

The quantity of petroleum and its products exported during the year increased substantially as compared with 1935, the amounts and values for the two years being as follows:

1935—10,993,540 barrels valued at $13,321,708. 1936—12,405,222 barrels valued at $15,910,638.

Petroleum and its products continued to form the largest part of the colony's exports in 1936, the value being approximately two and a half times that of the products of the next most important of its industries, viz.: sugar (including molasses and rum). Of the total exports, petroleum and its products (including asphalt) formed 62.63 percent.

The Asphalt Industry

The asphalt industry continued to operate normally. The total production of asphalt for the year amounted to 111,965 tons. The following table shows, comparatively, the quantity of asphalt produced and exported during the years 1934, 1935 and 1936:

	1934	1935	1936
Production (in tons)..	92,829	134,578	111,965
Export (in tons).....	56,089	82,349	70,543

Wildcats Planned

HOME OIL LOCATION 150 MILES NORTHWEST OF TURNER VALLEY

Home Oil Company, Limited, will drill a wildcat test on the Brazeau structure, about 150 miles northwest of Turner Valley field of Alberta, Canada. Preliminary exploration work has been undertaken by the company and it is planned to start the test before fall. A syndicate comprised of E. Ashburner, C. S. Blanchard, K. C., T. B. Jenkinson and A. J. McCormick, all of Medicine Hat, controls leases in the area.

Five Tests Scheduled

Location for a test of Britannia Oil Company, Limited, on acreage between the Pekisko Hills area and National Petroleum Corporation's No. 2, geological pathfinder in south Turner Valley, is to be selected next week by Dr. T. B. Williams, consulting geologist. Probable drilling site is in Legal Subdivision 11, Section 32, Township 17. Four other tests are planned in this region: Fairmont Oils, Limited, on Legal Subdivision 2 or 7 of Section 29; Firth Petroleums, Limited, on Legal Subdivision 2 or 3 of Section 16; C. T. Fillan and W. S. Henderson, on locations not yet announced. Soturn Oils, Limited, also holds acreage in this area.

Producing While Drilling

Between 30 and 40 barrels of crude was being taken from the Dalhousie sands at Richland Oil Company's No. 3, drilling below 5500 feet. The lime is expected within two weeks, according to Roy Widney, drilling contractor. The well is being completed with cable tool equipment. Satisfactory progress is being made at Monarch Royalties and at Royalite Oil Company's Sterling-Pacific 5, and either one or both may reach the completion stage before Richland's No. 3.

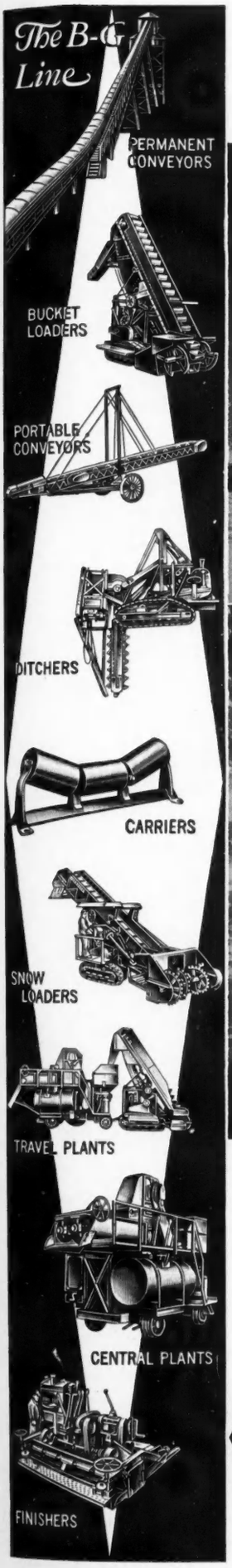
Two tests were spudded last week: Royalite Oil Company's Sterling-Pacific 6 in Turner Valley was drilling below 100 feet as the week closed, while Anaconda Oil Company, Limited, on the Steveville structure, was reported below 60 feet with surface casing run to that depth. Brown Oil Corporation's No. 3, near Royalite Oil Company's Dalhousie 8, completed as a failure a month ago on the west flank, is awaiting gas and water lines before spudding.

Acid Boosts Output

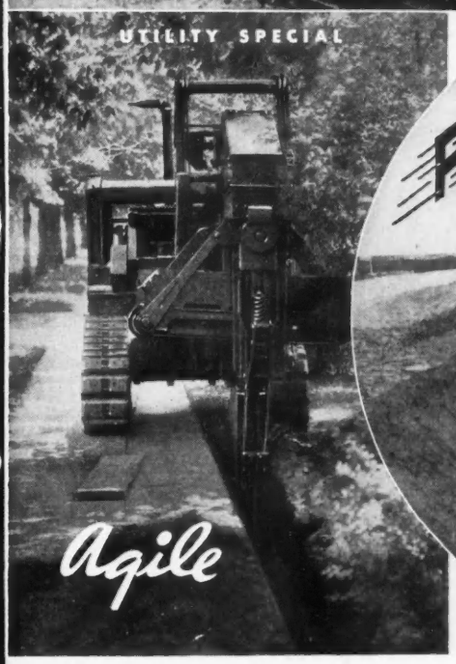
Royalite Oil Company's Sterling-Pacific 3 attained a slight increase in production following a second acid treatment last week. The first treatment several weeks ago resulted in an increase from about 90 barrels daily to a steady yield of 240 barrels, while the second treatment resulted in a further increase to 270 barrels. Similar treatment was to be given this week to Century Royalties, Ltd.'s well, which pioneered the west flank of Turner Valley and is now producing about 100 barrels of crude a day, and Foundation Petroleums, Ltd.'s well, now producing about 230 barrels a day.

Expect 25 Completions

After consultation with drilling superintendents, geologists and company officials, E. W. Kolb, Calgary operator, fixed dates for probable completion of 30 Turner Valley tests now drilling. The study shows that 25 tests may be completed during the next six months —two in July, two in August, six in September, eight in October, four in November and three in December.



4 Barber-Greenes



The same exclusive basic design applies to all B-G Ditchers. They have demonstrated their milling ability through Florida's coral rock. The self-cleaning buckets have proven themselves in the stickiest gumbo, and the records set by B-G's in the oil fields show dependability and speed that insures profitable ditching.

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OKLAHOMA FIELDS

Lucien pool completion has largest potential in years.

* * *

Cleveland County wildcat will drill to Wilcox.

* * *

Exploring area west of Fitts bounded by two faults.

Oklahoma City.—Activity in the Oklahoma City sector last week centered in Logan and Noble counties, with an important wildcat location reported in the southeastern part of Cleveland County.

In the Logan County portion of Lucien pool, Champlin Refining Company's Pfeiffer 4, SW NE NW 4-19n-2w, had the second Wilcox sand from 4935 to 5077 feet, and during a test which lasted 10 hours and 10 minutes made 3410 barrels of oil and 10,900,000 cubic feet of gas. It was completed for one of the largest potentials for the field in several years, being gauged at 4178 barrels of oil in 12 hours or a total potential of 7855 barrels. Gas averaged 11,080,500 cubic feet. The well missed the first Wilcox sand.

Stanolind Oil & Gas Company and Amerada Petroleum Corporation's Pfeiffer 7, SWc 33-20n-2w, in the Noble County portion of the field, topped the second Wilcox sand at 4925 feet and at 4935 feet developed a fishing job. When the job had been completed, the well resumed drilling and when last reported, was at 4980 feet in hard second Wilcox, flowing by heads. No estimate of production was made. The soft pay is expected in about 25 feet, having drilled through 56 feet of sand already.

Big Production From Billings Well

Tide Water Associated Oil Company's Shaffer 3, SE NE SW 21-23n-2w, on the southwest trend of the Billings pool of Noble County, on potential test made 3853 barrels of oil and 3,850,000 cubic feet of gas through tubing from 4334 feet in the Wilcox sand.

Phillips Petroleum Company and Shell Petroleum Corporation's Hackett 3, NW SE SE 21-23n-2w, flowed 35 barrels of oil an hour while drilling at 4336 feet in the Wilcox sand. It made 40,000,000 cubic feet of gas.

Tide Water Associated Oil Company's Hackett 6, NW SW SE 21-23n-2w, at the south end of the Billings pool, was completed last week for a potential of 3796 barrels of oil and 2,900,000 cubic feet of gas daily from 4332 feet in the Wilcox sand. The flow was through tubing set at 4310 feet. It is the farthest southwest test in the pool. The company completed cellar for Hackett 7, SWc SE 21-23n-2w, a south offset to Hackett 6. Hackett 8, SE SW SE 21-23n-2w, was digging cellar.

May Attempt West Extension

The possible west extension of the Billings pool into Garfield County received a substantial boost last week with two major oil companies buying 80-acre tracts in the area, from the state school land department. Indian Territory Illuminating Oil Company bought E½ NW 16-23n-2w, paying $2,600, and The Texas Company took W½ NW 16-23n-2w, for which it paid $1,448.

Stanolind Oil & Gas Company and Amerada Petroleum Corporation's Johnson 1, NWc SE 4-20n-2w, at the north end of Lucien, will cement back from 5317 feet to set whipstock and attempt to drill by junk.

W. R. Curry's Schlopp 1, SE NE SE 32-20n-2w, topped the first Wilcox sand at 4885 feet and set seven-inch casing at 4884 feet. It was waiting on cement. Cellar and pits were being dug for Schlopp 2, SEc 32-20n-2w.

Start Important Wildcat

Southeastern Cleveland County has an important wildcat test with the starting of Hollenback et al's Ward 1, SW SE NE 30-7n-1e, east and slightly north of Lexington. It is to be carried to Wilcox sand. Located on a seismograph high, the test is believed to be near the south end of Nemaha ridge. Some are skeptical regarding this last point, stating they think the ridge plays out a short distance south of Moore pool. Stanolind Oil & Gas Company and Amerada Petroleum Corporation controlled much of the acreage, but because most of them have early expiration dates and could not be extended, they were turned over to Hollenback. Several companies and dealers are supporting the test.

Ready for Potential

Mid-Continent Petroleum Corporation's Dobson 1, SWc 11-17n-1w, in the Langston pool of Logan County, is ready to take potential. The well made 213 barrels of oil during the last 24 hours, swabbing and flowing from the Wilcox sand from 5078 to 5092 feet.

Gulf Oil Corporation's James 3, NE SW SW 27-10n-2w, Moore pool, Cleveland County, flowed 679 barrels of oil in eight hours after acidizing at 7291 feet in the Wilcox sand, and was pulling tubing to test through casing. Gulf's James 2, SE NW SW 27-10n-2w, reamed the hole to 7264 feet and developed a fishing job.

Ohio Oil Company's Messer 3, SW NW SW 32-14n-3w, Edmond pool, Oklahoma County, was bailing below 2350 feet early in the week, with gas breaking through the mud. Depth is 6640 feet.

Ohio Oil Company et al's Hathaway 4, NWc 16-13n-3w, acidized with 6000 gallons at 6600 feet and was showing for 7,000,000 cubic feet of gas during the initial test. Potential was scheduled for Ohio's McMillan 5, NE SW SW 31-14n-3w, which flowed 153 barrels of oil in four hours from 6706 feet in the Wilcox sand.

Senora sand wildcat makes small producer

Tulsa.—While attention was focused on other spots in the Tulsa area, Seminole County came through last week with a producing wildcat, Devonian Oil Company's Whitfield 1, NEC NW, 27-7n-7e. It made 50 barrels from Senora sand, found at 2100 feet and drilled to 2126 feet. The flow soon settled to around 30 barrels daily and indications are that the well will make a small pumper. It is a mile south of the old Transco pool, also a Senora sand producer, discovered December 14, 1926, by Transcontinental Oil Company, now the Ohio Oil Company.

The first well in the Transco pool in the southwest quarter of 22-7n-7e found top of the sand at 2195 feet and drilled to 2215 feet for initial production of 12 barrels. Five other wells were drilled on the quarter section. Three were producers and two were dry holes. When discovered this small pool was credited to an unidentified sand, later classified as the Sonora.

Formation Erratic

The Senora sand is erratic as to oil, although it produces in other parts of the state. It is not a contributor of consequence to the outpost of the Greater Seminole area, in which both the Transco pool and the new discovery are located. No immediate drilling is contemplated around the Whitfield well, as the owner will give this well time to demonstrate its ability as a producer.

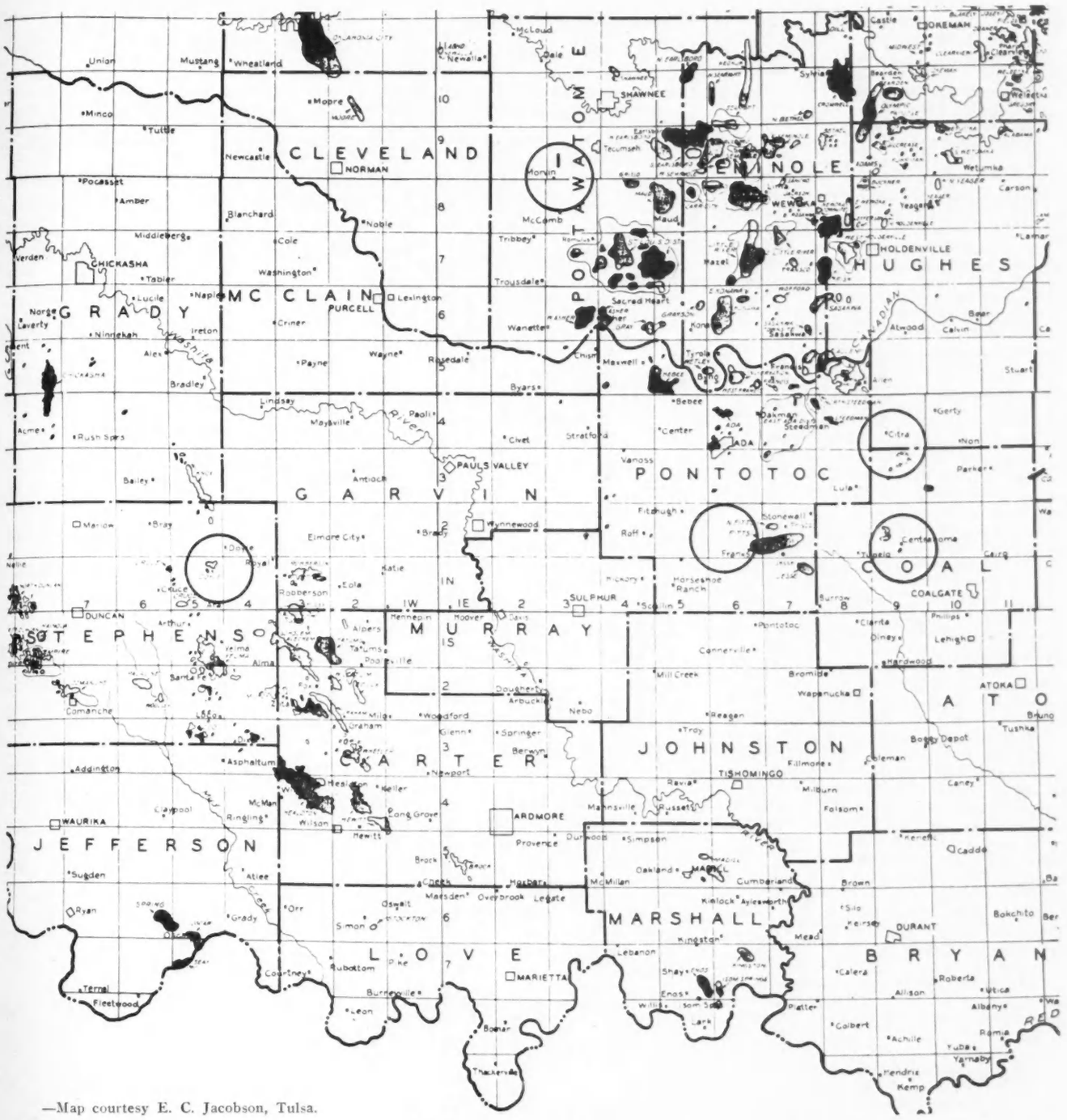
At Centrahoma, Coal County, Carter Oil Company lost the swab in Thompson 1, CSL NE NW 34-2n-9e and tubing had to be pulled.

In the Citra area, Hughes County, a fishing job came about at Hamilton 1, C WL NE SW 33-4n-9e, also being drilled by Carter Oil Company and associates, when a nipple was lost in the hole.

While bailing in preparation for drilling out plug in Billington 1, SE SW SW 32-9n-3e, Stanolind Oil & Gas Company and Amerada Petroleum Corporation, lost the bailer. It was recovered late in the week and bailing resumed. Casing is set in this Pottawatomie County wildcat, which had four feet of Wilcox sand 5316 feet.

Watching Roodhouse Wildcat

C. W. Roodhouse et al's Booth 1, SE NW SE 20-2n-6e, 3½ miles west of Fitts field, continued to make hole be-



—Map courtesy E. C. Jacobson, Tulsa.

Showings in five Oklahoma wildcats have encouraged the state's drilling campaign.

In Pottawatomie County, Stanolind Oil & Gas Company and Amerada Petroleum Corporation's Billington 1-B, SE SW SW 32-9n-3e, drilled into the Wilcox sand at 5316 feet.

In Hughes County, Carter Oil Company's Hamilton 1, CWL NE SW 33-4n-9e, was fishing for nipple after coring to 5986 feet in dolomitic sand. The test swabbed 34 barrels of oil in eight hours at 5935 feet some two weeks ago.

In Coal County, Carter Oil Company et al's Thompson 1, CSL NE NW 34-2n-9e, has had small production by flowing and swabbing from between 5200 and 5300 feet in the viola lime.

In Pontotoc County, C. W. Roodhouse et al's Booth 1, SE NW SE 20-2n-6e, was running lower on the Viola than west edge wells in Fitts field, although it had oil showings in the Hunton lime topped at 4039 feet, and penetrated 349 feet.

In Stevens County, Helmerich & Payne's Graham 1, SWc NE 12-1n-5w, was drilled to 5014 feet and considered a dry hole. Last week casing was perforated between 3785 and 3803 feet and made two flows of oil.

low 4880 feet. Although flanked on every side by dry holes, most of them quite old, the well has had shows in nearly every normal oil bearing formation through which it has drilled. A fairly good show was had in the Hunton lime, topped at 4039 feet and drilled and cored to 4388 feet. It is running lower on the Viola lime, topped at 4530 feet, than wells on the west edge of Fitts. Bromide was topped at 4821 feet. Sandy lime was had from 4850 to 4855 feet, but was dry.

There are numerous dry holes in the area, but only two are near enough to have much bearing on Booth 1. The nearest is W. E. McCraw's Mayhue 1, NEc 19-2n-6e, to the west, drilled in 1933. It found the Hunton lime dry between 1677 and 1683 feet, and had a hole full of water in sand between 1747 and 1776 feet. The well was abandoned at 1871 feet. Southeast of the new test, and much nearer Fitts, Blanchard and others drilled Crabtree 1, NE SE NE 27-2n-6e, which found a dry sand from 1680 to 1710 feet. It went into the Cromwell sand at 2365 feet and to 2920 feet, where it was abandoned.

Bounded by Two Faults

The area in which Booth 1 is drilling is bounded by two faults, the Stonewall on the north and the Franks on the south. The test is about midway between the two and near their apex at the west end of the Franks graben.

Meanwhile some interesting events took place in the Jesse area of Pontotoc County. Deep Rock Oil Corporation et al's Garrett 1, NEc SE 3-1n-7e, found saturated Hunton lime from 3775 to 3790 feet last week, but drilled

to 4100 feet in Sylvan shale, topped at 4053 feet. The well is checking about 208 feet higher than Francis Oil & Gas Company's Provence 1, SW NW NW 2-1n-7e, which drilled to 4230 feet and was plugged back to test the Gilcrease sand between 1865 and 1930 feet.

This well also has caused considerable conjecture, some looking for a connection between the recently opened Muse area south of Fitts and across the fault in Section 33-2n-7e and Jesse. Viola lime in the Muse area is found at around 3551 feet, while in Jesse the formation is encountered at an average depth of 3360 feet, a difference of about 200 feet.

Jesse Townsite Extended

Less than one mile due south of Jesse Townsite, Contiental Oil Company's Brown 2, NWc NE 11-1n-7e, came into production late last week. It drilled to 4580 feet in the Bromide and after drilling plugs, flowed 364 barrels of oil in three hours and was shut in for potential. This well found the Viola lime at 4173 feet, and had the Bromide between 4412 and 4465 feet. Seven-inch casing was set at 4182 feet, and standard tools rigged up at 4465 feet. The well was drilled to 4580 feet for the production.

Mid-Continent Petroleum Corporation's Shaup 1, SW NW SW 24-5n-6e, north end of West Francis pool, Pontotoc County. topped the Hunton lime at 2848 feet; topped the Sylvan shale at 2895 feet and drilled to 3110 feet. Top of the Viola was established at 3078 feet. The well was reported running some 150 feet lower on the Hunton lime than a dry hole located in Section 22-5n-6e. Earlier in the week, the well swabbed some oil and was acidized, following which it made 143 barrels of oil net during an 18-hour swabbing test. After making a 130-barrel oil flow in 13 hours, operators decided to drill ahead. It topped the Dense at 3135 feet and was shut down for orders at 3185 feet.

North of the East Shawnee pool, Atlantic Refining Company's Dooley 1, SEc SW 9-11n-5e, topped Hunton lime at 4676 feet and drilled to a total depth of 4706 feet. Packer was set at 4688 feet and a drill stem test taken. Opened for one hour, operators had a recovery of 120 feet of mud and no oil.

In the same area, Mid-Continent Petroleum Corporation's Logan 1, NEc SE 31-11n-5e, pumped 80 barrels of oil and an estimated 70 barrels of water during the last 24 hours opened. The company's Logan 2, SE NE SE 31-11n-5e, was drilling ahead at 4225 feet in shale.

Reports included several good producers in the Fitts field, two of them from the Cromwell sand. E. H. Moore's Harper 6-B, SE NW NE 29-2n-7e, which drilled to 3635 feet in the formation, flowed 521 barrels of oil in 24 hours through tubing. J. E. Crosbie's Burris 2-C, SEc NW 27-2n-7e, drilled to 3525 feet in the formation and flowed 85 barrels of oil in two hours and made 2,000,000 cubic feet of gas.

Stahl Petroleum Company's Dennis 1-C, SW NE NE 28-2n-7e, had shallow pay sand from 2475 to 2580 feet. Tubing was run to the former depth and the well washed in showing oil. The hole was blown dry with gas, following which it flowed 42 barrels of oil in one hour and 36 barrels in another hour. It was shut in for tests.

Helmerich and Payne's test holds south state interest

Ardmore.—Interest in southern Oklahoma was limited almost to one well last week, Helmerich & Payne's Graham 1, SWc NE 12-1n-5w, in the old Doyle area of Stephens County, began showing for a well and then started faltering. It was reported to have flowed from 250 to 300 barrels of oil, accompanied by 10,000,000 to 20,000,000 cubic feet of gas following perforation of casing between 3785 and 3790 feet.

When opened later in the week, the well made 65 barrels of oil the first 30 minutes then dropped to three barrels the next half hour, and was shut in.

OKLAHOMA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BECKHAM COUNTY—		
Bud Lewis, Bingham 1, ne ne ne 31-8n-26w	*	2214
CARTER COUNTY—		
Barnett Pet., Lukas 1, sw se se 14-1s-3w	*	2779
Carl Carter, Harley 11, sw nw nw 19-2s-3w	4	488
Carter, Ward 42, sw ne nw 6-4s-3w	20	1128
Kewanee O&G Ferguson 10, ne se nw 6-4s-3w	87	1130
Magnolia, E. T. Richards 70, sw nw ne 6-4s-3w	20	1173
Pure, Collins 8, ne sw ne 16-4s-3w	14	1349
GARVIN COUNTY—		
Cox & Hamon, Harris 3, se nw nw 32-1n-3w (pb 3150)	177	3278
HUGHES COUNTY—		
Empire, Born 3, ne sw nw 20-7n-8e	24	2912
Mid-Continent, Elizabeth 3, ne ne sw 20-7n-8e	65	2930
Winona O&G, Harjo 3, nw se nw 20-7n-8e	240	2916
Harjo 3, ne se nw 2-8n-8e	*	4363
Manahan, Oliphant "F" 2, ne ne se 2-9n-8e	40	1737
J. D. Hanna, Gorman 1, ne nw ne 14-9n-8e (otd 1910)	5	1900
Lanahan, Norton 1B, se ne ne 6-9n-10e	*	1575
JEFFERSON COUNTY—		
Bridwell Oil Co., Spring 1D, se ne ne 25-6s-6w	*	2126
KIOWA COUNTY—		
Crabtree, Schirlah 1, ce ½ se 28-7n-20w	¶3	1018
MUSKOGEE COUNTY—		
Joe Paul et al, Monday 1, ce½ ne ne 9-13n-16e	*	1826
C. Lambert, Manuel 2A, ce½ ne nw 6-15s-15e	108	1291
Summers, J. Jefferson 2, ne sw ne 6-15n-15e	*	1350
OKFUSKEE COUNTY—		
Texas, Bearden 1, nw nw se 16-10n-9e	*	3258
OKMULGEE COUNTY—		
Selby, Grayson 2A, nw nw ne 3-14n-14e (pb 1250)	5	2200
PONTOTOC COUNTY—		
Delaney & Choctaw, Sawyer 1, sw se nw 7-1n-84	50	4524
Phillips, Norris 17, se se sw 25-2n-6e	3116	3764
Burk Greis, Colbert 2, se se nw 36-2n-6e (pb 4208)	1559	4208
Magnolia, Chambers 1, nw se nw 36-2n-6e	3516	4144
Sinclair, Prairie, McCarty 1, se nw ne 22-2n-7e	3338	3904
Navarro, J. Horn 1, ne se ne 22-2n-7e	1739	3820
Magnolia, Norris 1, se se ne 21-2n-7e	3189	3765
Burrus "A" 13, nw se nw 27-2n-7e	413	2560
Burrus 15, se sw nw 27-2n-7e	30	2525
Sinclair Prairie, Burris 17, se ne nw 27-2n-7e	162	2582
Amerada, Smith 9, ne sw nw 28-2n-7e	465	2553
Bishop, Simpson 3-A, sw nw nw	1292	3636
Mabee, G. Smith 3, sw sw nw 28-2n-7e	125	2580
Moore, Woodroff 2-B, ne ne se 29-2n-7e	1149	3542
Magnolia, Hardin 15, ne ne nw 30-2n-7e	1432	3887
Summitt et al, Whittaker 1, nw ne se 31-4n-6e	*	3754
POTTAWATOMIE COUNTY—		
Magnolia, Ingle 2, se se ne 34-7n-4e (pb 4285)	20	4301
SEMINOLE COUNTY—		
P. Traugh, Dotson 1, ne se se 22-6n-6e (pb 2362)	100	2364
Smith, Huddleston 2, ne ne nw 32-7n-6e	180	2936
Empire, Born "B" 2, ne nw sw 20-7n-8e	70	2933
Amerada, F. Wood 1, se se ne 35-10n-7e	1146	3686
Magnolia, Fee 64, 2, ne nw se 24-5n-5e	38	2580
STEPHENS COUNTY—		
Angle & Angle, Lang 1, sw sw ne 24-1n-7w	*	5027
Carter & King, Arn 12, ne nw ne 26-1s-5w (pb 630)	*	668
Wilkins, Robberson 1, sw ne ne 15-2s-5w	5	896
Geo. L. Pace, Fee 14, ne se nw nw 28-2s-7w (pb 1762)	*	1976
Kolb & Cuinn, Boyd 1, cne nw ne 36-2s-7w	*	2004
TILLMAN COUNTY—		
I. T. I. O., Hatler 1, csw ne 32-2s-17w (pb 4359)	73	5169
D. S. Smith, Hamill 1, ne ne nw nw 6-5s-15w	*	2425
TULSA COUNTY—		
Sauter, Coonhead 1A, sw sw ne 12-17n-12e	3	1335
Anthony, Gilcrease 2-A, cw½ sw sw 34-17n-12e	15	2284
Sheldon, Teter 1A, ce½ ne nw 13-18n-12e (pb 2040)	20	2082
C. L. Hester, Postoak 1, ne ne nw ne 29-19n-12e	¶3	1275

*Failures; †Junked; ¶Million cu. ft. gas.

KANSAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BARTON COUNTY—		
Stanolind, E. Struder 1, se se sw 26 16s-13w	675	3412
Transwestern, Meyer 2, 13-17s-11w	870	3319
Spencer-Yarnell, Patzner 1, nw nw se 36-17s-11w	3154	3250
Schermerhorn, Hass 1, nw nw se 30-18s-15w	*	3541
Bird 1, nec 33-18s-15w	¶35	3535
Morgan & Flynn, Essmiller 1, se se ne 16-19s-14w	*	3748
Stanolind, Werries 2, c nw sw 10-20s-11w	178	3305
BUTLER COUNTY—		
Saco et al, Townsite 1, nwc ne 3-26s-5e	*	2688
Western Kansas, Archer 1, nwc ne 3-26s-5e	*	1325
CHATAUQUA COUNTY—		
Berger et al, Patterson 1-B, swc se 10-34s-13e	25	1191
COWLEY COUNTY—		
Murta & Wilson, Turner 1, nec nw 30-32s-6e	509	2247
ELLIS COUNTY—		
Republic, nwc 18-11s-16w	1724	3290
Empire, Bemis 1, sw se se 21-11s-17w	2021	3412
Margay, Bemis 4-C, sw se sw 22-11s-17w	2496	3534
Bemis 5-C, sec sw 22-11s-17w	2565	3462
Lario, Marshall 3, swc 31-11s-17w	2716	3705
Carter, Staab 3, sec nw 11-12s-18w	1000	3655
Texas, Tuder 1, nec sw 17-15s-18w	*	3588
Continental, Rolfs 3, nwc ne nw 34-17s-8w	1403	3265
ELLSWORTH COUNTY—		
Gulf, Grizzell 6, ne sw nw 31-17s-10w	2222	3245
HARVEY COUNTY—		
Bradley Bros., Neufelt 1, ne se nw 17-22s-1w	*	3608
Olson, Murphy 1, w nw se 30-23s-3w	454	3361
LYON COUNTY—		
Davis & Sory, Byrd 1, sec 32-21s-11e	*	590
McPHERSON COUNTY—		
Continental, Hurman 2, nec nw 29-21s-1w	644	3323
RENO COUNTY—		
Carter, Hogan 4, c s½ s½ sw 19-24s-4w	365	3389
Haynes, Muller 4, ne se nw 30-24s-4w	509	3400
RICE COUNTY—		
D. N. Scruggs, Bolton 1, sec nw 31-18s-7w	1102	3212
Hinkle et al, Schoenig 1, sw se se 21-18s-10w	*	3266

KANSAS FIELDS

Pryor and Lockhart open pool in Whelan County.

* * *

Look for discovery five miles south of Russell.

* * *

Atlantic's Pratt County wildcat cores saturation.

Wichita. — Oil operators in Kansas spent a profitable week, opening one new pool and completing numerous wells in older fields.

The new pool, northwest of Whelan pool of Barber County, was opened by Pryor & Lockhart's Gant 1, CSE 7-31s-13w. The well set six-inch casing at 4428 feet in the top of the Viola lime, which showed oil, and after drilling to 4438 feet, swabbed 90 barrels of oil in 24 hours on June 21. It had 500,000 to 750,000 cubic feet of gas, and the oil was 41 gravity. On another test it swabbed 110 barrels of oil in 24 hours.

Possibilities of a new pool are being watched for at Billings and Waite's Boxberger 1, NEc SE 21-14s-14w, five miles south of Russell in that county. It was showing for a producer from between 3008 and 3055 feet in Oswald lime.

Company, Well and Location	Init. Prod. Bbls.	Depth
Stanolind, Mooney 1, nec sw 5-19s-10w	*	3470
Hanna et al, Fulton 1, nwc ne 24-19s-6w	*	4002
Bradley Oil Co., Mitchell 8, ne sw sw 32-19s-10w	1776	3316
Carter, Risse 1, sec sw 33-19s-10w	1275	3334
Ohio, Wood 2, sw ne nw 3-20s-10w	*	3360
Gulf, Poncin 2, swc ne 5-20s-10w	1336	3336
Schmidt 4, ne sw se 6-20s-10w	1116	3327
Tatlock, Berscheidt 7-A, ne se sw 6-20s-10w	1372	3299
Transwestern, West 1, swc nw 17-20s-10w	*	3140
Atlantic, Gossman 1-B, nw ne ne 8-21s-7w	768	3345
Garden & Haines, Gossman 3, sec nw 9-21s-7w	50	3434
Sage & Yankey, Gossman 5, sw nw nw 7-21s-7w	3847	3371
Douglass et al, Thayer 1, ne se se 24-21s-8w	*	3768
RUSH COUNTY—		
Schoenfeld et al, Suppes 1, swc 14-16s-16w	292	3555
Carter, Woodward 1, sec 23-18s-16w	¶20	3550
Pubort 1, sec 24-18s-16w	7	3538
RUSSELL COUNTY—		
Central Petroleum Co., Novak 1, nec se 6-13s-15w	*	3315
A. H. Witt, Witt 3, ne nw se 3-14s-15w	2219	3197
Empire, Sellens 5, swc 30-15s-13w	2116	3281
Derby, et al, Michaelis 4, nw sw nw 31-15s-13w	2818	3268
Gulf, Hoffman 4, nw ne sw 31-15s-13w	1624	3262
Michaelis 5, nw ne sw 32-15s-13w	1528	3331
Skelly, Neidens 5, sw nw se 32-15s-13w	1688	3330
Darby, Michaelis 1, nec se 36-15s-14w	1498	3287
S. A. Murphy, Dunes 1, swc 36-15s-15w	*	3479
SUMNER COUNTY—		
Stelbar, Rothrock 4, nwc ne 4-32s-1w	1565	3691
Texas, Harper 1, nw ne se 9-30s-3w	*	3900

*Failures; †Junked; ¶Million cu. ft. gas.

Saxman Pool Extended

Lauck & Moncrief's Hetter 1, NEc SE 1-21s-8w, which was showing two weeks ago, was brought in as a producer, completing an extension of the Saxman pool of Rice County one-half mile to the northwest. The well was given a 30-quart shot at 3354 feet in the conglomerate, and despite a heavily loaded hole, sprayed oil high into the derrick. No estimates of production were possible at the time, but as soon as the hole is cleaned out a test will be made.

Atlantic Oil Producing Company's Kachelman 1, SE NW NW 13-25s-14w, two miles east of Jordan pool, Stafford County, topped Siliceous lime at 4324 feet and when last reported was bottomed at 4333 feet, where a core had a salty, sulphurous taste. A survey of the hole was to be made as soon as a fishing job had been completed.

Lanterman Outpost Produces

The Texas Company's Henning 1-A, NEc NW 22-18s-11w, four miles east of Ellinwood in Barton County, and one-half mile south of Lanterman pool, filled to the top of the hole in two hours after the plug was drilled at 3115 feet in the Kansas City lime. The well made 108 barrels of oil in six hours when the pay was first topped at 3040 feet. There is a possibility, according to field men, that the well may be completed for as high as 10,000 barrels of oil.

Fred Phillips et al's Hubenett 1, SW NW SW 23-20s-6w, which opened a new chat producing area two miles north of production in the old Welch pool of eastern Rice County several weeks ago, swabbed 37½ barrels of oil an hour during a four-hour test from the chat at 3366 feet. It was running five-inch casing.

Continental Oil Company's Powell 1, CSL SE NW 31-18s-7w, west offset to the discovery producer in the Bolton extension of the Geneseo pool of Rice County, topped the Siliceous lime at 3228 feet and set seven-inch casing, preparatory to drilling in with cable tools.

Bolton Discovery Offset Looks Dry

Phillips Petroleum Company's Bolton 1, SWc NE 31-18s-7w, east offset to the Bolton discovery and which was an attempt to further extend the area, looked like a failure at 3230 feet in the Siliceous lime, where it found water.

Newton Development Company and S. H. Keoughan et al's Tenny 1, NWc SW 19-18s-25w, which has opened a new pool near Ness in that county, drilled plug and proved the top of the Mississippi lime as the producing formation. It was found to be from 4373 to 4380 feet instead of from 4380 to 4381 feet as first reported. The hole filled 1000 feet with oil in 2½ hours and was drilling ahead.

Denver Producing & Refining Company and Barnsdall Oil Company's Porter 1, SWc NE 30-25s-41w, interesting deep wildcat test on the Syracuse Dome in Hamilton County, was seeking to restore circulation lost at 4237 feet. Top of the Kansas City lime was at 3896 feet.

Recovers Saturated Core

Atlantic Refining Company et al's Runyon 1, SW NW NE 11-27s-13w, 10 miles southeast of Kipp pool but in Pratt County, topped the Kansas City lime at 3735 feet and drilled to 3929 feet. From 3925 to 3929 feet it recovered three feet of saturated core. It was to start bailing.

Hall and Billings' Smith 1, SEc NW 14-12s-16w, west of Fairport pool but in Ellis County, drilled to 3364 feet in the Siliceous lime and swabbed two barrels of oil per hour, net. The hole was drilled ahead to 3669 feet and swabbed six barrels of oil per hour. It was to be acidized.

Casing was being cemented at C. H. Lebow et al's Richmond 1, SWc SE 15-11s-17w, northeast of Hays. The hole filled 600 feet with oil in 90 minutes after the Siliceous lime had been found between 3440 and 3441 feet.

Stanolind Oil & Gas Company's Fitzgerald 1, SEc 22-24s-13w, north offset to the discovery producer in the McNaughton pool of Stafford County, began showing as a producer from the Siliceous lime last week, filling 3800 feet with oil when the plug was drilled out at 4126 feet. Top of the formation was found low at 4116 feet.

Glimac Oil Company et al's Proud 1, SW SE SE 33-30s-1w, several miles north of the Wellington pool of Sumner County, based the Mississippi lime at 3917 feet and had the Wilcox sand at 3968 feet. Some showings of oil were had at 3971 feet and water was encountered at 3979 feet.

35 Indian tracts sold

Pawhuska. — Thirty-five of the 60 tracts of restricted, allotted Indian lands, offered for sale here June 22 by the Osage Indian agency, were sold for a total bonus of $8,975. Top price was paid by Devonian Oil Company, Tulsa, for Tract 24, SE of 5-25n-10e, the price being $1,600, the tract consisting of 160 acres. Next sale is scheduled for around September 20, according to an announcement by C. L. Ellis, superintendent of the Osage agency.

NEW MEXICO

Single-well pool still single after 10 years.

* * *

Monument still open for north extension.

Hobbs.—The oldest oil producing area in southeast Lea County remained a single-well pool the past week when The Texas Company et al's W. H. Rhodes 2-A, SE NW SE 22-26s-37e, ½-mile southeast of the discovery well, failed to make oil in drilling to 3280 feet, or 284 feet sub-sea. It has been completed as a 25,000,000-foot gasser after 230-quart nitro shot in sandy-lime at 3130-3230 feet. The original well on the Rhodes permit paved the way for the development of the county's important areas, having been completed in October, 1927, at 3213 feet. It is producing about 50 barrels daily, with an accumulated yield of more than 100,000 barrels of 40 gravity oil. Later exploration work to the north and northwest yielded dry gassers. The Texas Company's Shepherd 4-B, C SE 5-26s-27e, situated on the northwest trend, tested little oil with water at 3200 feet, and has plugged back to 2960 feet to perforate pipe for gas production.

North trend of production for the Monument field remained open for extensions when Tide Water Associated Oil Company's State 2-J, C NW NW 17-19s-37e, flowed 178 barrels per hour through casing with tubing in place after drilling to 4030 feet, or 316 feet below sea level. It extends production ¼-mile north, and produced without the aid of acid. The east flank of this field proved erratic the past week. Ohio Oil Company's Laughlin 4, C W½ SE NE 9-20s-37e, failed to flow when treated twice with acid at 3850 feet, and also when deepened by stages to 3875 feet and 3905 feet. It has since been shot with 200 quarts of nitro at 3806-86 feet, and is cleaning out. Amerada Petroleum Corporation's Laughlin 3, C NW NE 9-20s-37e, a northwest diagonal offset, logged good porosity in drilling to 3856 feet, or 299 feet sub-sea, and flowed natural an average of 24 barrels of oil per hour for 12 hours through 40/64-inch choke. This completion temporarily winds up all scheduled drilling for Amerada Petroleum Corporation's discovery block, which has 101 oil producers and no failures. The last producer is two locations west of a failure. Ohio Oil Company has started operations on State-Hansen 3, C W½ NE NE 16-20s-37e, and State-Hansen 4, C W½ SE NE 16-20s-37e, using odd spacing in offsetting its own wells because of the hazardous locations. Continental Oil Company et al made location for Sanderson 2-B-10, NE SE NE 10-20s-36e.

Lea County accounted for 20 oil and gas completions the past week, and during the same period added 11 locations, including Frazier Moss et al's H. A. Flint-Conoco 1, C NE NE 29-20s-34e, 1¾ miles northwest of nearest production in the Lynch area.

Well Allowable Reduced

Lea County wells prorated on a flat allowable basis were reduced 2 barrels to 85 barrels daily for the last period in June, according to new schedule issued by Glenn Staley, umpire. Other areas in the county were cut proportionately.

The Texas Company's University-State 10, C NW NW 19-20s-37e, located on the south line of the Monument field, flowed 187 barrels initial with 5 percent water after triple acid treatment and nitro shot at 3878 feet. The company has started work on University-State 12, C SW SW 20-20s-37e, offsetting production on the north end of the Eunice field. Gulf Oil Corporation's State-Butler 1, C SW SE 19-20s-37e, flowed 90 barrels, 5 percent water, after using 2000 gallons of acid at 3850 feet. The undrilled interval between the two fields is narrowed down to two locations, with The Texas Company holding the probable conecting link. In the event this gap is closed, the ma-

NEW MEXICO Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
LEA COUNTY (Eunice)—		
Empire, Closson 3, sw sw ne 6-22s-36e	504	3830
Gulf, State-Orcutt 8-C, lot 2, 6-21s-36e	360	3855
W. W. White 3, c se ne 25-20s-36e	360	3850
W. W. White 5, c ne ne 25-20s-36e	288	3855
Stanolind, McQuatters 1, c ne ne 11-21s-36e	75	3847
LEA COUNTY (Hardy)—		
Gulf, C. L. Hardy 1, c se sw 20-21s-37e	15	3810
LEA COUNTY (Hobbs)—		
Stanolind, Thorpe 30-X, c w½ sw ne 10-19s-38e	13,673	4201
LEA COUNTY (Langlie)—		
Gulf, Westfall 1, se sw se 15-25s-37e	400	3375
LEA COUNTY (Mattix)—		
El Paso Nat'l Gas Co., Jim Camp 1, c sw sw 6-24s-37e	¶10	3656
Stanolind, C. Myers 2, sw sw sw 4-24s-37e	300	3570
The Texas Co., J. F. Black 2, c ne sw 21-24s-37e	120	3565
LEA COUNTY (Monument)—		
Amerada, Laughlin 3, c nw ne 9-20s-37e	1500	3856
State 1-Q, c w½ nw se 16-20s-37e	500	3870
Continental et al, Britt 5-B-18, c sw nw 18-20s-37e	5000	3877
Gulf, State-Butler 1, c sw se 19-20s-37e	360	3850
Phillips, Britt-Conoco 2, c nw sw 18-20s-37e	1200	3865
The Texas Co., State-University 10, c nw nw 19-20s-37e	187	3878
Tide Water Associated, State 2-J, c nw nw 17-19s-37e	4200	4030
LEA COUNTY (Rhodes)—		
The Texas Co.-Amerada-Columbia Carbon, W. H. Rhodes 2, se nw se 22-26-37e	¶25	3280
LEA COUNTY (Penrose)—		
Skelly, E. A. Sticher 1, c ne sw 4-22s-37e	100	3750

*Failures; †Junked; ¶Million cu. ft. gas.

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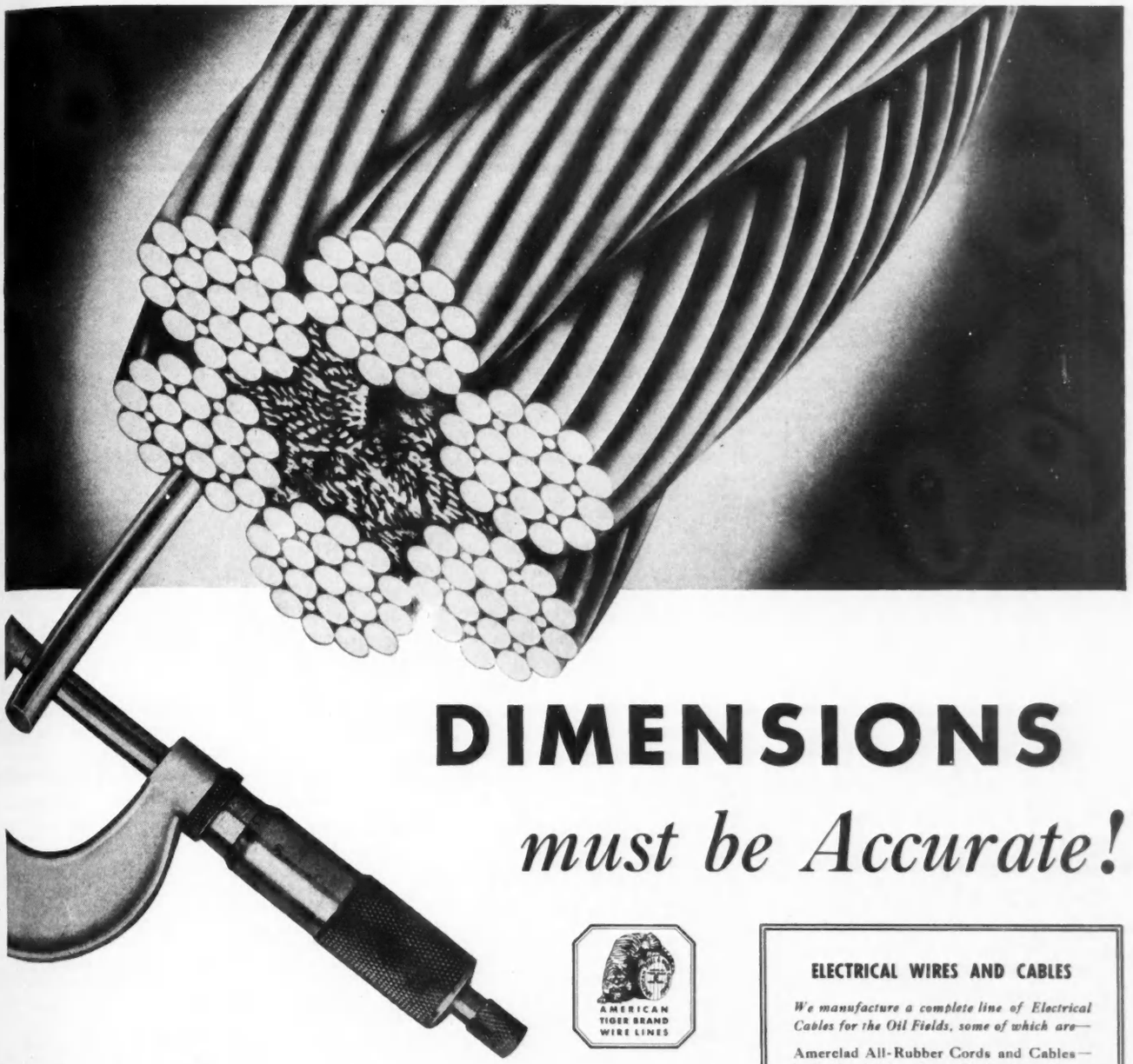

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jors that are caught with a surplus of federal permits in a single area are confronted with the possibility of forfeiting same, else obtain a special, dispensation from the Department of Interior.

New operations allotted the Eunice field were on the edge of production. Gulf Oil Corporation's State-Janda 1-D, C NW SW 2-21s-36e, is on the northeast flank of the structure. Continental Oil Company's State 1-E-16, C SW NW 16-22s-36e, and Empire Oil & Refining Company's Clossen 4, C SE SE 6-22s-36e, are in the southwest area.

In the Mattix area, The Texas Company's Black 2, C NE SW 21-24s-37e, gauged 49 barrels oil in 9 hours after dual nitro shot in sandy-lime at 3554-3565 feet. Locations were made for Humble Oil & Refining Company's J. Williams 1, C SE NE 34-24s-37e, and for Continental Oil Company et al's E. E. Jack 1, C NW NE 27-24s-37e. Gulf Oil Corporation has started operations on State-Cole 3, C SE NE 16-22s-37e, offsetting production in the Penrose area.

Stanolind Oil & Gas Company's Turner 1, C NW NW 20-20s-38e, 1¼ miles northeast of nearest production on the north end of the sandy-lime belt, is showing for a small oil producer after using acid twice at 3918 feet. Continental Oil Company's Burger 1, C NW SW 19-20s-38e, offsetting production, flowed 59 barrels in 10 hours while cleaning out after 144-quart nitro shot at 3780-3872 feet. The Texas Company's Weir 1, C NE NE 14-20s-37e, was drilling in lime at 4175 feet, with water showing from above. It is seeking production in the equivalent of the Hobbs lime.

Western Missouri to have wildcat near Kansas line

Kansas City. — Location has been made for a wildcat test in extreme western Missouri, about four miles north of Stotesbury pool of Vernon County, Kansas, which produces from Bartlesville at 600 feet. Earl M. George and Dr. C. P. Bandurant have blocked leases in the area, and plan to spud immediately near the center of NE NE 33-37n-33w. A total of 3000 acres has been acquired.

The location is the result of a surface geological survey showing a compound dome, totally enclosed. The feature is in an area of trend anticlines, extending in a northerly direction along the Kansas-Missouri line. Operators expect the Wilcox zone at near 1100 feet as their first objective, and may carry the test to Arbuckle at about 1400 feet if indications warrant.

Comrade Oil Company bid high for Rusk state lands

Austin.—Bid of Comrade Oil Company for lease of 906 acres out of the old Rusk Penitentiary lands in Cherokee County was adjudged best by the state board for leasing this week.

Accepted upon a contingent basis that the company drill a 5500-foot well within 12 months, it provided for cash bonus of $1135, one-eighth royalty, and $50 per acre payable out of one-eighth of the oil.

NORTH AND WEST TEXAS

West Texas drilling to continue to expand.

* * *

North Gaines County wildcat producing oil.

* * *

Ward and Pecos counties produce from Delaware.

Aggressive drilling program waged for months in West Texas will continue to expand until pressure is exerted by adverse crude demand or price situation, or a tightening of financial support. New strikes in rapid order for the Permian and Delaware horizons, plus routine extension of established fields affords ample opportunities for the district to maintain its stride. Proven and semi-proven undrilled locations in the district are sufficient to keep the available drilling equipment engaged for several years. The past week contributed important developments, including completion of a flowing wildcat producer near the north line of Gaines County, with nearby acreage already allotted a group of tests, and the probable discovery of a new oil area for northwestern Gaines County. The Delaware horizon has a new strike in process of completion for Ward County, and a favorable showing was developed by a Western Pecos County prospect.

Gaines County Permian well flows 294 barrels daily

Midland, Texas. — Completion of a natural-flowing producer from Permian at 4959 feet by Amon G. Carter and Continental Oil Company's Wasson 1, on a north Gaines County geophysical prospect, was preceded by the starting of 4 additional tests on short term leases in the area. Two new locations to the west and northwest are required by lease terms, and development has expanded northwest into Yoakum County. The discovery well began flowing June 19, and last mid-week was flowing 294 barrels of pipe line oil, testing 34.4 gravity, with about 4,000,000 feet of gas daily. The oil carries sulphur, and is the same type as produced from other fields in the north portion of the West Texas basin.

Output of the discovery well will be used by owners in completing 3 other tests started some weeks ago. The partnership's Langdon 1, SE SE NW Section 44, Block AX, three miles northeast of the producer, is changing at 2187 feet from light Diesel rig to a heavy steam rig, and will burn oil. Amon Carter et al's Wasson-Sharp 1-B, SWc Section 47, one mile southeast of the discovery, is installing rotary and will use gas for fuel, when drilling is resumed below surface pipe set late last month. T. J. Drilling Company, contractor on the discovery well, will drill the latter two, and took part in the drilling of the discovery gasser at Seminole; discovery well of the Kirk area, Gaines County, and also Hockley County's single producer. Continental Oil Company's Moore 1, SWc Section 46, Block AX, is to install rotary and resume drilling at 245 feet. Amerada Petroleum Corporation's Matthews 1, NEc Section 417, 1¼ miles southwest of the producer, was drilling at 1810 feet.

Phillips Petroleum Company holds the west offset to the Wasson discovery, and is due to start operations, since drainage will be created in supplying boiler fuel for local rigs, and has made location for Brand 1, SE SE NE PSL Section 55, Block AX, 1⅝ miles northwest of the producer. The latter is on a short-term lease farmed out by Indian Territory Illuminating Oil Company.

Expansion of development work into southern Yoakum County materialized the past week when The Denver Development Company made location for J. A. Whittenburg Estate 1, NWc Section 831 Block D, J. H. Gibson Survey, having contracted several weeks ago to pay $1250 per acre, payable from one-fourth production for five-year lease on the above section and Sections 830 and 836. Contract calls for the starting of first test in 90 days, and completion of a well on each 40-acre unit within five years, else undrilled acreage must be forfeited. Majors hold short-term leases in the immediate area, and contributed acreage and bottom hole money to J. W. Murchison, broker, for the immediate starting of a test. Murchison turned the contributions, except 160-acre lease, to The Denver Development

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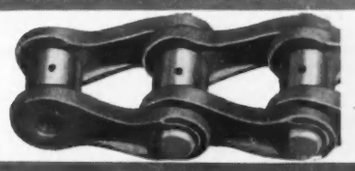

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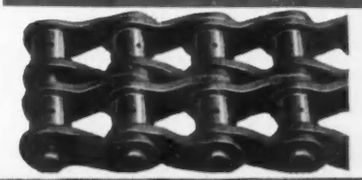

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Company as an inducement to advance the starting date of its contracted test.

Extensive geophysical work was carried on in the Wasson area by Continental Oil Company before site for the first test was selected. Amon G. Carter was assigned one half interest in a six-section block, with option on 50 percent interest in an adjoining six-section block for the drilling of a free test on each. Continental Oil Company assumes operations after the completion of each. The latter concern will take charge of Wasson 1 after the formation is treated with acid. Drilling in the Wasson area is typical of other nearby West Texas and New Mexico deep-lime fields. Wells require surface pipe, an intermediate string on the Yates horizon at the 3100-foot level, and an oil string in the big lime near the 4800-foot level. An abundance of fresh water is available at about 100 feet. Nearest railroad facilities are at Seagraves, 16 miles to the east. Completed wells are expected to cost about $50,000, fully equipped for flowing.

New Gaines County Field

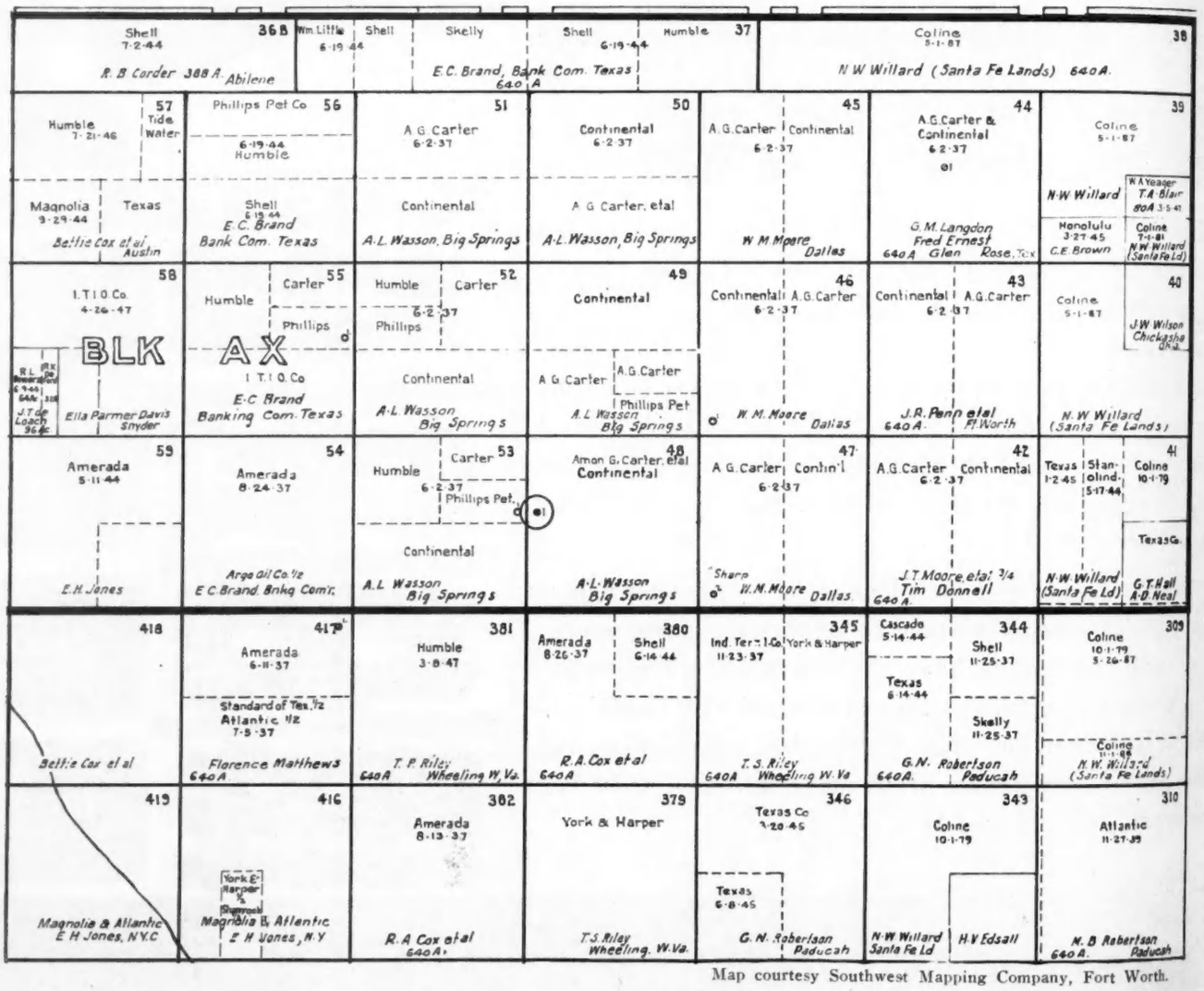
Appearance of gas in big lime and high structural position places Continental Oil Company's E. H. Jones 1, C SE NE PSL Section 22, Block A-7, northwestern Gaines County, in a firm position to uncover a new field for the county. Gas was found in the Yates sand zone at 3140 feet, and in lime at 4637-38 feet, with drilling underway below 4700 feet. Top of brown lime was logged at 4020 feet, or 370 feet below sea level, being 365 feet higher on structure than Texas Pacific Coal & Oil Company and Texas Consolidated Oil Company's Jones 1, 2½ miles to the southwest, which was abandoned above water at 4680 feet. It is 70 feet higher on this marker than a failure seven miles east by south on the Jones land. Argo Oil Corporation's Jones 1, 4½ miles north by east of Continental Oil Company's new prospect, is changing to cable tools at 2095 feet.

Shell Petroleum Corporation's Mann 1, east offset to the discovery oil producer for the Seminole area, Gaines County, responded to treatment with 2000 gallons of acid with a flow of 320 barrels of fluid, 15 percent acid water and mud, in 13 hours on one-inch choke, with about 4,000,000 feet of sulphur gas daily. Hole is bottomed at 5060 feet, or 1712 feet sub-sea. This second oil producer for the area was swabbed in May 22, and later killed to try and cement blank liner to exclude upper gas.

Delaware sand prospecting pays off with two strikes

San Angelo.—Delaware sand prospecting in West Texas yielded a new producing area for southwestern Ward County, and showed free oil in a deep wildcat in extreme western Pecos County. This high gravity oil horizon has been given greater consideration by majors and independents since the first of the year, and is now sharing in the extensive wildcat drilling program underway throughout the district.

C. H. Mahres, Kenneth Slack et al's Pat Wilson 1, S¼ H&TC Ry. Section 133, Block 34, Ward County, developed an initial flow of 2,000,000 feet of gas with spray of oil from top of Delaware sand at 5085 feet. Volume of gas declined about 50 percent when the hole filled 1500 feet with oil while awaiting string of 5 3/16-inch pipe for a production test. A nitro shot is expected to convert this wildcat into a commercial producer. It is the easternmost producer in the Delaware basin area, and logged top of Delaware lime at 5036 feet, or 2369 feet below sea level, being about 50 feet lower on this marker than a failure about 3½ miles to the north-



Map courtesy Southwest Mapping Company, Fort Worth.

Northern Gaines County wildcat strike by Amon G. Carter and Continental Oil Company's A. L. Wasson 1, indicated by circle, attracted 4 additional tests on a northeast-southwest trend due to lease expirations before the original project showed for a natural flowing producer. Area has since gained 2 locations, and is the most active drilling center in the north portion of the Permian basin.

west. The latter was drilled by E. B. Lovelace and Tex-Oil Production Company on the Redman tract, Section 162, and showed oil and water after nitro shot at 5047-77 feet.

The west corner of Pecos County temporarily held the spotlight early last week when Humble Oil & Refining Company's E. M. Gray 1, near C NE SW GH&SA Section 94, Block 11, filled 200 feet with oil from lower Delaware at 5560 feet, with an elevation of 3592 feet. The oil show was exhausted in drilling to 5615 feet. Top of the lime section was logged at 5010 feet. Nearest deep tests are about 10 miles northwest and same distance southeast, and are about 540 feet higher and 1000 feet lower, respectively, on the lime marker than Gray 1, indicating an abnormal structural condition for the area. The company holds lease on a large block around Gray 1, and will do more prospecting on its acreage.

D. J. Finley and A. W. Cherry's W. D. Johnson 1, located 1¾ miles west of Delaware production in the Mason field, Loving County, is due to make a small oil producer after a nitro shot at 3602-3670 feet.

NORTH TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
Bridwell Oil Co., A. P. Nichols 1, sec 39	*	1762
Consolidated, Portwood 19-C-D, sec 2412	*	1468
F. H. Gohlke et al, F. M. Peterson 1, blk 992	*	1557
G. E. Grininger et al, R. O. Prideaux 1, sec 1863	*	1002
R. L. Hayes et al, Bearden 3	†	817
Humble, G. B. Hamilton 22	*	1356
Nancy McChesney et al, G. M. Benson 3, sec 1829	*	869
Pet. Producers Co., B. W. Owens 1	*	1777
Wichita Prod. Co., W. D. Pace 1-B, sec 163	*	1287
CLAY COUNTY—		
H. T. Merrill et al, W. L. Sewell 16	1	251
W. L. Sewell 17	2	255
W. L. Sewell 8-B	2	252
The Texas Co., J. B. L. Hansard 5, blk 1	63	1102
COOKE COUNTY—		
Kerlyn Oil Co., Ed. Wilson 2-A	90	2080
Kingery Bros. et al, H. Hensheit 2-A	*	812
F. W. Merrick et al, J. W. Hess 14	7	860
Ripps & Ungerman, W. L. Johnson 3	70	1937
DENTON COUNTY (Bolivar)—		
Denver Prod. & Ref. Co., Gibson Bros. 1	44	1653
JACK COUNTY—		
Beard & Collier, Ezzell 2-C	84	2986
Jane Wiggins 2	262	2949
Big Six Oil Co., T. Clayton 1	92	3030
Brazos River Gas Co., H. C. Moore 4	10	2957
Jack Kadane & J. N. Fidel, L. Clayton 1	25	3070
H. M. Leidecker et al, J. W. Padgett 1	162	3260
Moncrief & Showers, Inc., S. M. Jones 4	549	3155
Ohio Fuel Supply Co., F. H. Rhodes 2-A	604	2973
Pacific Western Oil Corp., L. J. Hester 2	12	3076
J. W. G. Winnett et al, C. C. Henderson 2, blk 2	*	365
Yorktex Pet. Co.-States Oil Corp., D. C. Clayton 2-B	217	3000
MONTAGUE COUNTY—		
Gibson & Jennings, Inc., R. Howard 2, blk 90	*	2056
Gibson-Jennings & Sinclair Prairie, D. T. Holt 9, blk 45	*	1713
THROCKMORTON COUNTY—		
Canyon O&G Co., E. M. Marrs 1	*	550
WICHITA COUNTY—		
P. H. Flynn et al, W. B. Honaker 1	*	780
W. B. Honaker 2	*	352
Forbess & Golden, C. A. Mertens 3, sec 4	*	920
W. H. Hammon & Hanlon-Buchanan, Inc., Fassett-Tuttle 1, sec 1	*	1505
Leo Oil Co., A. S. Fonville 1, blk 323	*	1959
Maro Co., Inc., S. P. Gibson 1-C, blk 302	*	2036
Perkins-Cullum Oil Co., S. B. Burnett 28, sec 5	50	1541
S. B. Burnett 30, sec 5	12	1374
Pois & Schulz, Foster-Allen 7-C, sec 2	14	350
Foster-Allen 2-F, sec 2	*	1056
Foster-Allen 1-G, sec 1	*	1871
Geo. Proctor et al, Foster-Allen 11-A	240	1552
Reno Oil Co., M. A. Eads 15-B	6	1765
O. J. Richardson et al, Waggoner Bros. 2, sec 35	*	655
Ruyle Farm Oil Co., L. B. Ruyle 51	11	1564
WILBARGER COUNTY—		
Consolidated et al, W. T. Waggoner Est. 2-BB, sec 1	*	1947
Phillips, W. T. Waggoner Est. 194, sec 43	2262	3073
The Texas Co., W. T. Waggoner Est. 436	61	1984
YOUNG COUNTY—		
Alexander & Beavers, G. B. Hamilton 10, sec 2401	*	1005
Bohner & Gilmore, Prideaux 8-A, blk 15	10	583
L. T. Burns et al, W. A. Rushing 10, sec 3401	*	904
FHE Oil Co., Nora Finch 9-C, sec 39	11	670
Golding & Cochran, M. M. Graves 1, sec 233	*	1050
G. E. Grininger et al, Prideaux Bros. 7	*	745
E. L. Hansen et al, J. O. Stratton 4	3	549
Johnson & Mitchell, D. Keith 1, sec 28	*	740
Kimmell, Lee & Co., R. Campbell 7, sec 1370	*	999
L. A. Long et al, W. A. Thompson 1, sec 2692	*	2125
G. W. Martin et al, J. W. Jones-Bonnell 4	*	550
Martin & Sweeney, Sarah Hardy 1, sec 251	*	670
Pet. Producers Co., C. W. Fisher 1	*	655
C. E. Luton 12	*	680
Sterling-Williams et al, W. H. Drum 1	*	150
O. L. Swanson et al, J. W. Bailey 1, sec 165	*	903
The Texas Co., N. Finch 11-A, sec 40	*	772
West & Honea, B. N. Honea 1, sec 1492	*	1012
Yorktex Pet. Co. et al, W. E. Steele 1	*	2600

*Failures; †Junked; ¶Million cu. ft. gas.

TEXAS PANHANDLE
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CARSON COUNTY—		
Gulf, E. Cooper 19	575	3030
Sinclair Prairie, E. Cooper 7	625	3047
United Crude Oil Co., E. Cooper 7-C	789	3115
GRAY COUNTY—		
Bradshaw O&G Co., E. L. Sackett 6	468	3116
Empire, Hood-Walberg 3	559	3045
Gayden Oil Co., McKinney 3	183	3344
Magnolia, J. W. Cantrell 3	¶6	3065
T. Catlin 2	679	3223
Stanolind, A. J. Culler 6	552	3276
H. H. Merten 4	256	3270
HUTCHINSON COUNTY—		
Barnsdall, T. D. Lewis 5	814	3020
Benonine Oil Co., W. F. Starnes 6	1176	3220
Gulf-Panhandle Ref. Co., Dial 71	780	3059
Phillips, Juanita-Johnson 2	372	3055
J. J. Perkins 11	357	3001
Skelly-Cabot Co., W. E. Herring 4	261	3132
Stanolind, Haile 4-A	100	3058
W. B. Haile 2-B	466	3065
Harry Stekoll et al, B. Wisdom 7	20	3120
Harry Stekoll-Darby Pet. Co., Dial-Perkins 5	420	3080
MOORE COUNTY—		
Canadian River Gas Co., C. L. Kilgore 2-A	¶25.3	3498
Phillips, Mary Beth-McDowell 1	¶49.3	3165

*Failures; †Junked; ¶Million cu. ft. gas.

WEST TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ANDREWS COUNTY (Fuhrman)—		
J. D. Bodkins, R. M. Barron & Eastland Oil Co., Kemp 1	709	4476
DAWSON COUNTY—		
Ernest L. Wilson et al, Texas Land & Mortgage Co. 1	*	5044
ECTOR COUNTY (Goldsmith)—		
Bond Oil Corp.-L. C. Harrison, TP Land Trust 7	674	4275
Devonian Oil Co., C. Scharbauer 4-B	1455	4220
W. H. Dunning, Jr., Est., C. Scharbauer 1-A	1355	4224
Gulf, C. A. Goldsmith 16	2227	4245
C. A. Goldsmith 20	912	4190
C. A. Goldsmith 22	1072	4290
Landreth Oil Corp., C. Scharbauer 3-B	1093	4215
C. Scharbauer 6-C	1303	4234
C. Scharbauer 4-G	1127	4215
Penn Oil Co., C. Scharbauer 2	808	4220
Shell, T. P. Land Trust 2-A	562	4269
ECTOR COUNTY (North Cowden)—		
Landreth Oil Corp. et al, Holt 3	350	4229
Stanolind, J. M. Cowden 47	493	4340
FISHER COUNTY (Royston)—		
Gen'l Crude Oil Co., J. C. George 8	45	3112
GLASSCOCK COUNTY—		
Conoco & Group 1 Oil Corp., Settles 35-S	394	1277
HOWARD COUNTY—		
Illinois Oil Co.-O. M. Murray, R. Lane 3	761	2830
Sinclair Prairie, G. M. Dodge 50	509	2770
JONES COUNTY—		
Ungren & Frazier, H. Dorsey 10	714	2214
PECOS COUNTY (Wildcat)—		
Cardinal Explo. Co., J. H. Tippett 1-A, sec 20	*	997
Dobbs Oil Co., University-Sun 1	*	2100
UPTON COUNTY (McCamey)—		
British-American O. P. Co., Robbins 9	730	2252
Continental, A. A. Reese 9	839	2450
A. A. Reese 10	715	2635
J. W. Ellis et al, J. W. Robbins 7	698	2132
Humble, A. A. Reese 7	357	2646
Snowden & McSweeney Co., E. S. Hughes 5	383	2340
Weekley Oil Corp., Cordova Union 3	195	2065
Williams & Williams Drlg. Co., Robbins 4	649	2190
WARD COUNTY—		
Atlantic-Standard Oil Co. (Tex.), University 3-B	878	2770
Bond Oil Corp., L. C. Harrison, C. C. Dorr 4	53	2450
Gulf, E. W. Estes 29	1833	2620
E. W. Estes 32	397	2650
E. W. Estes 33	752	2620
E. W. Estes 34	1479	2675
Pat Hill et al, Clements-Sun 15	30	2331
Humble, Univers.ty 18-F	69	2734
Chas. F. Kolp et al, Hartage-Wilson 3	22	2495
Hal C. Peck et al, Monroe 5	80	2335
Provine & O'Quinn, Inc., H. Hadwin 2	148	2220
S. J. Rixford et al, K. Green-Sun 6	22	2431
Sinclair Prairie, G. P. Hill 9	180	2492
Tide Water Associated, Johnson 26	1210	2670
Johnson 28	1037	2648
Johnson 29	3283	2635
Johnson 31	2303	2632
WINKLER COUNTY (Henderson)—		
Atlantic, Fred Leck 12-B	619	3090
Atlantic-E. M. Wahlenmaier, Fred Lecl 6-E	3500	3080
Empire, L. Daugherty 3-E	6500	3061
W. K. Royalty Co.-Uscan Oil Co., Walton-Humble 5-A	7200	3052
WINKLER COUNTY (Kermit)—		
W. D. Ambrose et al, W. A. McCutcheon 1	499	3053
Atlantic-J. C. Maxwell, Lovett 4	1163	3100
Lovett 10	387	3141
Bert Fields et al, O. Clapp-Pure 11	1840	3105
Gulf, Oscar Clapp 9	1127	3108
L. Daugherty 43	747	3143
L. Daugherty 46	759	3150
L. Daugherty 47	866	3020
Herbert Oil Co., Ida Hendrick 2	483	3095
Humble, N. R. Colby 13-C	912	3085
J. B. Walton 7-A, sec 48	142	3140
Magnolia, J. B. Walton 84	309	3243
J. B. Walton 85	812	2940
WINKLER COUNTY (Keystone)—		
Amon G. Carter et al, Walton-Pure 6	429	3390
The Falcon Co., McCutcheon-Humble 6	240	3545
McCutcheon-Humble 2-A	250	3533

*Failures, †Junked; ¶Million cu. ft. gas.

Van test to try for Glen Rose production.

* * *

Talco field may get another whirlwind drilling campaign.

Talco, Texas.—Recovery of oil saturated lime and sand from the lower Glen Rose member of the Trinity series by Magnolia Petroleum Company's J. A. Chapman 2, offsetting the easternmost producer in Talco field, enhances the prospects of a second oil producing level for this faulted structure. About eight feet of oolitic lime and seven feet of sandy-lime, carrying oil and gas, was recovered in cores taken between 5587 feet and 5607 feet and operations were halted to run formation tester.

Chapman 2 is located near the most westerly northwest corner of a 341¾-acre lease, George Dyer Survey, and 660 feet southwest of the company's producer in the Paluxy zone at 4367 feet. It failed to make a commercial producer in the Paluxy, and was converted into a deep test, although it is near the east closure of the structure. Top of anhydrite was logged at 5350 feet, or 5021 feet sub sea, and oil saturation appeared immediately below this barren zone. J. Z. Werby et al's Sam Williams 1, NWc 50-acre lease, M. E. P. & P. Ry. Survey, about two miles east of Talco production, was abandoned last March at 6219 feet after failing to log oil or gas showings in the Glen Rose. The latter topped anhydrite at 5434 feet, or 5093 feet, and base at 5676 feet.

May Deepen Paluxy Producers

Development of attractive oil and gas production from lower Glen Rose at Talco will give the field another major drilling program, and will result in deepening operations on many of the Paluxy sand producers now making a high percentage of water in pumping their 84-barrel daily allowable. Paluxy production at Talco extends in a general east and west direction for 12 miles, with a maximum width of two miles, and is the largest fault line field in the East Texas basin. Considering its size, it has an abnormal number of small leases and drilling sites, including the Talco townsite.

Plugging orders were scheduled to be issued late last week for Housh & Thompson, Inc. et al's A. B. Spencer 1, SEc 92.9-acre lease, G. Linchicum Survey, about five miles southwest of Sulphur Bluff field, Hopkins County, after encountering salt water sand in Paluxy series at 4778-4781 feet, with an elevation of 494 feet. No oil or gas showings were recorded. Top of Georgetown lime was logged at 3832 feet. This wildcat is on the Talco-Mexia fault trend, and the structure had been outlined by previously drilled Woodbine failures.

Sulphur Bluff Closure Forecast

Subsurface information revealed by F. D. Jones et al's A. A. Bassham-Gulf 2, north offset to the easternmost producer in the Sulphur Bluff field, Hopkins County, forecasts the closure of the structure about ½-mile to the east, thereby virtually defining the productive limits of the faulted structure on all sides. A production test was underway on Bassham-Gulf 2 late last week after coring good oil saturation at 4490-4535 feet. Top of Paluxy series was logged at 4463 feet, with an elevation of 444 feet, and part of the Georgetown

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lime, topped at 3915 feet, was cut out. Correlation of the log with other nearby producers reveals that the fault trend shifts from a northeast strike to almost due east, and Bassham-Gulf 1 showed the contours at sharper intervals to the south of the fault. F. D. Jones et al expect to have 10 producing locations on this 207-acre lease, or the same number as on their S. B. Pierce-Gulf 150-acre lease, which is now drilled up.

Want Flat Allowable

Sulphur Bluff operators are in accord on a request pending before the railroad commission to change the method of production allocation from well potential to a flat allowable, with drilling restricted to a 10-acre basis. Six producers on the west end of the field are showing salt water, and water is due to spread unless the premium is removed from drilling the entire oil saturated zone in order to register maximum potentials for a large allowable.

Progress on Stanolind Oil & Gas Company's Hawks 1, Campbell structure, Hunt County wildcat on the Talco-Mexia fault plane, was at a standstill last week because of stuck drill pipe at 6570 feet. The hole was reamed to 12-inch diameter to the above depth to continue through the Travis Peak series topped at 5965 feet, or 5399 feet sub sea.

Position favorable for exploration of Glen Rose

Tyler, Texas.—The structural position of Humble Oil & Refining Company's L. K. Riggs 1-A, SWc 74.2-acre lease, Wm. Daniel Survey, second lower Trinity test for Van field area, Van Zandt County, is favorable for exploration of Glen Rose lime and sandy-lime series, potential oil and gas source. Situated a short distance northeast of Woodbine production, this project was drilling in massive anhydrite at 5320 feet, having logged the first stringer at 4860 feet and the main body at 5300 feet, with an elevation of 463 feet. The first fault was cut at 3680 feet, and a second displacement was logegd at 4550 feet, enabling the test to enter the lower Trinity series on the upthrow side. Some porosity, with trace of dead oil was found in upper Glen Rose at 4819-59 feet, but did not warrant testing.

Pure Oil Company's Davis 1, lower Trinity failure for the northwest flank of the faulted dome type of structure, logged first anhydrite stringer at 5461 feet, with an elevation of 488 feet, and top of second Glen Rose at 5825 feet, with Travis Peak at 6490-7501 feet.

Two other so-called deep tests on the northeast and southeast edges of Van production found salt water in the Paluxy, but did not drill through the zone.

Wildcat Sets Protection Pipe

A protection string of 9⅝-inch pipe has been cemented at 5133 feet for Tide Water Associated Oil Company et al's McElreath-Suggett 2-C, second Trinity project for the Opelika area, Henderson County. It is about 880 feet southeast of their first test, which continues to flow about 10 barrels oil daily by heads through partly clogged drill pipe and rock bit from an unidentified zone at 7195 feet. The second test logged the top of Georgetown at 5070 feet, or 4618 feet sub sea, being 20 feet lower than the producer.

Barnett Petroleum Corporation's Sanford 1, near the southeast corner of a 161-acre lease, Wm. A. Corder Survey, projected Trinity test for the Mount Enterprise faulted structure in eastern Rusk County, was idle at 4630 feet while making boiler repairs. Georgetown lime was topped at 3275 feet, or 2914 feet sub sea. This compares with a sub sea depth of 2883 feet for the same marker on Pure Oil Company's Faulkner 1, lower Trinity failure drilled about five miles to the west last year.

A production test for Roeser-Pendleton, Inc.'s Bowyer 3, prospective oil and gas producer from the lower Trinity series on the northwest flank of Cayuga field, Anderson County, was underway late last week after cementing seven-inch pipe above first oil porosity in lower Glen Rose at 7510 feet. Hole is bottomed at 7676 feet, with an elevation of 316 feet. A formation tester used at 7603-58 feet showed free oil.

Shelby County wildcat makes five million feet of gas

Shreveport.—A new producing structure for the East Texas Border counties apparently was opened last week in Shelby County, six miles south of Joaquin, at Redditt & Gray's Pickering Lumber Company 1, Stephen English Survey. The well, bottomed at 4108 feet in what has been determined Paluxy, was showing five million feet of gas daily. The well was treated with acid, increasing the gas flow some. The 185 barrels of oil used in making the treatment caused some to watch the well as a possible oiler. When this amount of oil was produced, the well made only dry gas.

Tanks and separator were erected following the treatment with acid, but no fluid showed several hours after the well was first turned into them. With elevation of 303 feet, seven-inch casing was cemented at 4080 feet.

In Panola County, Glassell & Glassell's Pierce & Chesbro 1, Julia Soape Survey, was drilling below 5250 feet after a seven-minute drill stem test from 4933-70 feet, ½ choke on bottom 9/16-inch on top, showed nine fourbles of salt water with show of gas and distillate.

EAST TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
Cook Drl. Co., F. J. Cox 6 (18-ac)	2500	3660
Federated Oil Co., Mayfield-Alford 5 (16-ac)	1000	3638
W. H. Gant-Garvin-Wegener, W. P. Moore 37 (134.24-ac)	1200	3577
W. P. Moore 49 (134.24-ac)	800	3606
Gilcrease Oil Co., Bradford 10 (40-ac)	2500	3654
Ohio Oil Co., S. H. Moores 43 (200-ac)	4000	3695
Pyramid Oil Corp., M. L. Thompson 3	3500	3775
Spandsco Oil & Roy. Co., J. R. Alford 2 (5-ac)	800	3616
Stanolind (was Walters Pet. Corp.), Thompson 1 (55/100-ac)	7000	3809
Termo Oil Co., F. B. Fox 12 (57.69-ac)	†	1060
Tide Water Associated, Ras Pool 14 (65-ac)	4800	3722
KILGORE AREA—		
Adams & Lyles, L. Howard 14 (47.7-ac)	9000	3558
Barnsdall, T. H. Gill-Shell 7 (83-ac)	5600	3606
Barnes Bros.-A. B. Ryan (was B-R Inv. Co.) Bean-Willoughby 2-A (54/100-ac)	3000	3558
Empire, H. P. Leverett 16 (86.96-ac)	9000	3747
Gulf, G. W. Culver 33 (209.01-ac)	5000	3566
Hamilton-Ellis, Utzman 4 (59-ac)	480	3535
Humble, H. Sexton 36-B (258.6-ac)	5500	3699
Magnolia, H. P. Hale 11 (50-ac)	100	3605
Alex B. Ryan et al, I&GN 2, Tr. No. 3 (1-ac)	8000	3630
Shell, J. B. Watson 71 (385.2-ac)	11,000	3641
Sultana Oil Corp., Sabine River 1-J, Tr. No. 6 (41-ac)	10,000	3540
Sun, J. R. Beall 26 (180-ac)	3000	3588
Sutton & Hawkins, D. Hilburn 9 (35.54-ac)	2000	3676
The Texas Co., W. T. Chappell 10 (84.37-ac)	7200	3716
Wirt Davis 12 (80-ac)	7800	3571
Westgate-Greenland Oil Co., Cole-Strip 2 (10.94-ac)	4500	3475
Cole-Strip 3 (10.94-ac)	4000	3473
LONGVIEW AREA—		
Atlantic Ref. Co., Burnside 37-B (217.16-ac)	9600	3590
J. M. Moore 71 (447¼-ac)	11,000	3630
Atlantic-J. K. Wadley, T. W. Lee 16 (111.67-ac)	12,000	3750
Barnsdall, J. G. McGrede 20 (109-ac)	9200	3582
Empire, Bumpass 16 (57.85-ac)	7200	3519
Faith Oil Corp., D. B. Finton 9 (52.4-ac)	3600	3736
Gen'l American Oil Co., B. F. Adams 1-A, lot 15	240	3637
Victory-Nathan 5-A (14.12-ac)	3000	3620
Gulf, W. A. Ray 16 (200-ac)	750	3593
Humble, C. C. Clemmons 11 (75.2-ac)	4200	3649
G. W. Willingham 13 (100.6-ac)	6000	3691
O. G. Murphy, Tr., J. B. Doby 9 (45-ac)	7300	3576
P. H. Pewitt et al, J. H. Sobey 5-A (23-ac)	500	3749
Rancho Oil Co., J. K. Edwards 15 (106-ac)	6000	3636
Stanolind, Stuckey-Thrasher 20-B (80-ac)	9500	3577
Tide Water Associated, B. Moore 16 (90-ac)	10,400	3538
ANDERSON COUNTY (Cayuga)—		
Tide Water Associated-Seaboard Oil Corp., G. W. Ware 7 (571.65-ac)	2000	4093
ANDERSON COUNTY (Long Lake)—		
FHE Oil Co., J. H. Morrow 1-B (10-ac)	300	5365
Hunt Oil Co., Sam Smith-Tidal 1 (112.89-ac)	250	5289
Tide Water Associated-Seaboard, F. Evans 2 (58.76-ac)	1200	5339
FRANKLIN COUNTY (Talco)—		
Humble, P. J. Dawson 3-A (80.45-ac)	110	4328
Housh & Thompson, Inc., C. L. Owings 7 (109-ac)	468	4310
Magnolia-Humble, C. L. Owings 6 (79½-ac)	405	4291
HOPKINS COUNTY (Sulphur Bluff)—		
D. S. Hager, W. P. Luse & Russ, Pierce 3 (97-ac)	720	4534
F. D. Jones et al, S. B. Pierce-Gulf 1 (150-ac)	750	4520
HENDERSON COUNTY (Cayuga)—		
Sun, R. R. Watkins 1	2000	4120
TITUS COUNTY (Talco)—		
Adams & Lyles, Inc., Pat Davis 7 (41.7-ac)	360	4330
B. G. Byars et al, W. T. Edwards 2-B (10-ac)	195	4300
W. T. Edwards 1-D (10-ac)	216	4303
W. T. Edwards 2-D (10-ac)	201	4305
Byrd-Frost, Inc., et al, F. Batson-Gulf 1 (30.58-ae)	425	4275
J. Hargrove-Gulf 6 (74-ac)	330	4241
Humble, A. P. King 40 (1053.36-ac)	316	4314
A. P. Kirkpatrick 3 (44.91-ac)	50	4328
Lucey Pet. Co. et al, I. N. Williams 3 (319.85-ac)	330	4284
Magnolia, Mary Batson 3 (30-ac)	600	4315
Tysco Oil Co., W. T. Edwards 4 (20-ac)	192	4277
FREESTONE COUNTY—		
C. F. Lytle et al, Roy Simmons 1 (28.83-ac)	*	4000
CASS COUNTY (Rodessa)—		
Magnolia, Haywood 21, P. Evans sur	520	6028
R. W. Norton, Hardin 1, G. Crowder sur	250	6000
United Prod. Corp., Belote 2, H. Holbert sur	375	6005
Horner 1, J. S. Smith sur	400	5998

*Failures; †Junked; ¶Million cu. ft. gas.

SOUTH TEXAS

South Coast deep production extended; new sand at Saxet.

* * *

Deep coring in Brooks County shows prospects.

* * *

Two Goliad County fields promise extensions.

Corpus Christi.—Extensions to several deep fields, establishment of another sand producing horizon at Saxet and showings in a Southern Jim Wells County wildcat, featured Frio sand developments in the South Texas Gulf Coast.

Hiawatha Oil & Gas Company's Mrs. Nellie Griffith 7, Section 416, Saxet field, Nueces County, was flowing considerable oil and gas and making some wash water through ⅛-inch choke to open 5500-foot production. The well, drilled to 7230 feet, plugged back and set 5½-inch pipe at 5585 feet, perforating at 5533½-43½ feet with 11 shots. The well was showing no salt water, and had built up pressures of 1650 pounds on tubing and 2060 pounds on casing.

The above sand has been present in a number of wells in the field, but none have attempted completion due to the fact that offsets required completions in horizons at 5800 feet or below.

Seaboard Oil Corporation's J. P. Luby, discovery well of the Luby field, southwestern portion of the county, recemented after first completion through perforations at 5045-50 feet developed a high gas/oil ratio. The second completion attempt at 5052-55½ feet brought about a flow of ½ salt water and ½ oil, following which perforations again were cemented. Four miles to the southwest, Taylor Petroleum Corporation was near its 7000-foot contract on J. V. Styles 1.

Flour Bluff Wildcats

Two wildcats are active in the Flour Bluff area, which will give information concerning the potentialities of this 6650-foot Marginulina producing area. J. K. Culton's I. M. Singer 1, 2 miles southwest of production was below 6000 feet, while Fain Gillock et al's Robert Poenisch 1, Block 32, was waiting on rig.

Phillips Petroleum Corporation abandoned John Harney 1, four miles west of Saxet field, after drilling to 6648 feet. Mills Benett's W. Hauermann, one mile west of the field, was coring below 5800 feet.

Magnolia Petroleum Company's A. A. Seeligson 7, near the southeast corner of Jim Wells County, is coring below 5500 feet, having passed through several gas and distillate shows in the Frio. The well, projected to 9000 feet, is reported to be considerably lower than the Premont field, 5 miles west. The test developed 200 pounds pressure and recovered 35 feet of high-gravity oil on a drill-stem test at 5380-86 feet. Another sand at 5401-4 feet was saturated with distillate and gas, but drill-stem tests failed. Another drill-stem test at 5469-79 feet developed 650 pounds pressure through ⅜-inch and ¼-inch chokes in 3½ minutes and recovered 5 feet of distillate. Several miles northwest, Wellington Oil Company's Sevier 1 was drilling below 6320 feet and has had nothing but hard dry sands.

McCampbell field, Aransas County, was given a ¾-mile northeast extension with Atlantic Refining Company's Porterfield 1, lots 9 and 10, block 14, which flowed 199 barrels per day through 3/16-inch choke under pressures of 2200 and 2300 pounds. The well is bottomed at 7129 feet with casing perforated at 7101-5 feet. This sand is providing some prolific wells.

The field apparently was defined on the east by Collins & Wilkerson's McCampbell 1, Lot 16, Block 10, which made salt water at 7121 feet.

Barnsdall Oil Company's Edwards 1-A at Lamar, is drilling below 8835 feet.

United Production Corporation's J. J. O'Brien 12, deep test on the east side of the Refugio field, Refugio County, was preparing to perforate above 7911 feet, the plugged-back depth. The well had been drilled to 7911 feet after setting 7-inch casing at 8343 feet. About ½-mile to the northeast, Edwin M. Jones' Ben Shelton 1, was below 5700 feet and drilling ahead.

In the extreme southwestern portion of the field, a new sand appeared to be in the making. Houston Oil Company's F. B. Rooke 32 drilled to 6420 feet, then sidetracked. In the new hole, sand was encountered at 6192-6202 feet, where a drill-stem test recovered 90 feet of oil, 400 feet of oily mud and 30 pounds pressure. A string of 5½-inch casing was set at 6138 feet.

Eleanor Oil Company's J. F. Green Estate 1, an old abandoned well in Williamson Survey, two miles southeast of Gregory in San Patricio County, was washed down to 7000 feet and 5-inch casing set. It originally was drilled to 7305 feet.

North Sweden extent up for early determination

San Diego.—North Sweden field, Duval County, was at the most critical stage since its discovery late in the week, several outpost wells ready to core for the sand. Their outcome will have an important bearing on the magnitude of this apparently major Jackson-sand-producing area. The proven area already is around 600 acres, but new extensions, if successful, will increase the figure to close to 2000 acres.

Standard Oil Company of Kansas' Atlee Parr, one mile south of production was down 4650 feet, 100 feet above the expected sand. Navarro Oil Company's E. M. Rossi 1, more than a mile southwest of production, had progressed to 2650 feet and likely would be ready to core for the sand over the week end. Slightly more than three miles southeast of production, King Drilling Company's Atlee Parr 1, was repairing boilers at 5376 feet, having failed to find a productive sand at the level the other wells are producing.

Hiawatha Oil & Gas Company has one of the most important wells on this trend, being Southland Life Insurance Company 2, 466 feet from the east line and 4196 feet from the south line of Section 15. It is more than 3 miles southwest of the North Sweden field and ¾-mile north of the original Sweden field. It was below 3000 feet at last reports. This company's Herberger 2, on the northeast side of the field, is a small producer through perforations at 5080-84 feet, definitely establishing an oil sand at this level.

The North Sweden field apparently is being rapidly cut off to the north by a series of low wells. George Parr's second test on the Vaello Puig land east of the first, topped the sand very low at 4803 feet and cored in 5 feet. A drill stem test, seat at 4799 feet, developed 125 pounds working pressure and showed 1300 feet of pipe line oil through ⅜-inch chokes, top and bottom. Three locations to the west, Russ Petroleum Corporation et al's A. Farias 2, established the water line for the field at minus 4398 feet. With elevation 414 feet, it topped oil sand at 4802 feet, which continued to 4812 feet. First signs of water appeared at this point and increased to the bottom of the sand at 4830 feet. The hole is bottomed at 4847 feet in shale, where casing was set. It was being completed at last reports, showing for a good producer.

Building Line

Humble Pipe Line Company was giving the field its first major pipe line outlet. A string of 19,000 feet of 4-inch welded line was being laid from the field to the company's Benavides pump station. The crude will be carried to the Inglesides - Port Aransas area. Gravis Pipe Line Company is operating a 4-inch line from the field to loading rack at Benavides, a distance of 3½ miles.

Edwin M. Jones's Harry Ezzell 7, west offset to the discovery well of the Ezzell field, McMullen County, flowed 250 barrels per day through 5/16-inch choke and registered pressures of 80 pounds on tubing and 390 pounds on casing. The test, second in the field,

Mileage ?

3 "NEW IDEAL" PIPE CLEANING MACHINES HAVE EACH CLEANED

Over 1,000,000 Feet

of Pipe and Still In Active Service

Many owners of New Ideal Pipe Cleaning Machines report that their machine has cleaned in excess of a million feet of pipe. One machine is still using the original set of cleaning blades; another has its second set of blades although the first set is still being used; one of the machines has been reconditioned and sold to another company to start on another long pipe cleaning record.

This machine has cleaned a million feet of pipe for Union Gas System, Independence, Kansas. Note extension stands for cleaning 40-ft. joints of pipe.

SPEED POWER CAPACITY FLEXIBILITY ECONOMY

Combining engineering research, manufacturing skill and practical field experience, New Ideal Pipe Cleaning Machines have brought an important development in pipe reconditioning. They are sturdily constructed, rapid, efficient and economical in the removal of dirt, rust, scale and corrosion from pipe and casing. Made in 3 models and several sizes, they include many exclusive features not found in other pipe cleaning machines.

NEW IDEAL

(Duo Hydraulic)

PIPE STRAIGHTENING MACHINES

Because of their engineering design, super construction, speed, power and flexibility, bring new possibilities in reclaiming bent and crooked pipe, casing, rotary drill stems, kellys, structural steel, rails, round and flat iron, etc.

Made in five models of varying power, strength, capacity and speed, there is a model to meet your most exacting requirements.

This New Ideal Model "A" Pipe Straightener, like the New Ideal Pipe Cleaning Machine, has also made an excellent record for Cosden Pipe Line Company.

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drilled to 2385 feet, plugged back to 1550 feet and perforated at 1501-8 feet. Several miles to the north, second well was finished in the shallow sand in the South Calliham field. W. P. Howard's Claunch 8, made 48 barrels per day on pump from sandy shale and sand at 1053-67 feet.

Frio County wildcat coring for Edwards lime

San Antonio.—Amerada Petroleum Corporation was coring for the Edwards limestone in Mrs. D. D. Harrigan 1, Frio County wildcat, to hold the center of interest in South Texas activity. The well, a wildcat, is located about 2½ miles southwest of Halff & Oppenheimer 8, which made an oil producer in the Edwards lime at 6219-30 feet recently. The latter well, however, developed some sulphur and salt water following which it was deepened to 10,341 feet in the Travis Peak, where drill pipe is stuck.

Just north of the field, Halff & Oppenheimer 1, an old well, had been plugged back from 6341 to 5850 feet and shot between 5550-5835 feet with 700 quarts of nitro. It is in process of completion.

Wilcox Oil & Gas Company's Light Ranch 1, first of four wells to be drilled by this company in southeastern Dimmitt County, was progressing below 7410 feet and has not picked up the chalk.

Wilson County's interesting deep wildcat, Maryland Oil Company et al's Tremmell (Rice) 1, May Survey, 3 miles northwest of Pandora, has been abandoned at 5610 feet. It topped the Edwards limestone at 5554 feet, but carried sulphur water. Also in Wilson County, and 12 miles southwest of Floresville, R. C. Stanley's E. M. Hierholzer 2, Salina Survey, has recemented at 1025½-31½, where it is showing for a producer. Fresh water broke in when the cement failed to hold on first completion attempt.

Brooks County core holes give production promise

Mission.—Standard Oil Company of Texas' two deep core explorations in Brooks County, continue to uncover new oil sands which give promise of production. Mestina Oil & Gas Company 5, Lease 1, in the main Alta Mesa field, was coring below 4650 feet after a sand at 4515-26 feet showed 430 feet of 45 gravity oil, 30 feet of salty mud and rocked up a pressure of 85 pounds in 10 minutes. Mestina 1, 6 miles north of the field, was coring shale at 5815 feet, its last good show being at 5151-68 feet, where considerable oil and some salt water was shown on a test.

K. E. Merren's Cockfield producer in the Barbacoas field, Starr County, still is tied up with a high gas/oil ratio. The well, bottomed at 5418 feet and producing from perforations at 5376-98 feet, is spraying about 1½ barrels of oil per hour and a large volume of gas through 5/32-inch choke and showing pressure of 2550 pounds on tubing.

Stapper Petroleum Corporation's Port Isabel 1, Cameron deep test was shut down at 7775 feet after sticking drill pipe. It likely will abandon. Ruez-Morton, Inc.'s United 1, also in this county, is drilling near 5500 feet. To the northwest in Willacy County, Shell Petroleum Corporation was still tied up with a fishing job in Yturria 1, which had drill pipe stuck at 10,286 feet.

La Blanca field, Hidalgo County, has two deep wells. Atlantic Refining Company's Lewis 1 is drilling at 4825 feet, while Davenport-Swallow 1 is below 6000 feet.

Two Goliad County fields promise extension

Beeville.—Two Goliad County oil fields gave promise of being extended late in the week with one outpost coring saturated sand and another completing.

Brown & Wheeler, Inc.'s J. R. Kauffman, ¾-mile northeast of the Hords Creek field, topped sand at 4385 feet in the Yegua, drilled to 4554 feet, set casing at 4500 feet and is finishing via the gun-perforation method.

Dirks Brothers' Dr. G. W. Allen 1-A was coring ahead at 4477 feet after finding saturated sand at 4239-53 feet in the Pettus. The well will drill to near 5000 feet to test Yegua sands, then plug back if no shows are encountered. The test is about 2000 feet southwest of nearest producion in the Pettus and 1500 feet southwest of a Yegua sand producer.

Plan gas/oil ratio survey at Corpus Christi

Austin.—Operators in the Corpus Christi field have been requested to equip their wells so as to facilitate a gas/oil ratio survey by the Railroad Commission.

Production Chief V. E. Cottingham wrote operators that the commission planned to make the survey in the near future.

El Tanque field hearing is set for July 1

Austin.—Notice of hearing in Austin July 1 on the El Tanque field in Starr County has been issued by the Texas Railroad Commission.

Production Chief V. E. Cottingham said that general field rules will be discussed at the hearing.

Reduced railroad fares to Houston oil show

Houston.—Arrangements have been made with all railroads throughout the United States for a reduction in railroad rates to be granted to oil men attending the Oil-World Exposition which will be held in Houston, Texas, from October 11-16, inclusive.

Special certificates are being provided for the purpose and the use of such certificates is necessary to secure the advantage of the reduced fares. Everyone planning to attend the oil show is, therefore, urged to write in for a reduced fare certificate which can be obtained by addressing E. G. Lenzner, general manager, Oil-World Exposition, Inc., Petroleum Building, Houston, Texas.

SOUTH TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
LAREDO DISTRICT		
DUVAL COUNTY—		
Central Producers, Inc., J. & M. Luptack 5, sur 41 (Government Wells)	50	2447
Cox & Hamon, Yoakum-Green 4-A, sur 118 (Hoffman)	50	2709
Hamill & Smith, C. W. Hahl 14-C, sec 63 (Loma Novia)	75	2586
Humble, DCRC 4-D, sec 585 (Colmena)	*	1487
Kepley Prod. Co., Clara Driscoll Sevier 2, 330 ft sl and el nw¼ sec 71, Rafeal Rosalia gr	*	3518
Magnolia, A. L. Labbe 5, H&GN sur (Labbe)	650	2859
John J. O'Hern, S. Benavides 1-D, blk 30, O'Hern & Seacord subd (Cole-O'Hern)	175	2920
Peggy-Sue Oil Co., S. Benavides 1, blk 23, O'Hern-Seacord subd, (Cole-O'Hern)	1250	2896
Westheimer & Daube, Z. Campos 33, sec 212 (Seven Sisters)	150	2714
McMULLEN COUNTY—		
W. P. Howard, B. C. Claunch 8, 330 ft sl and wl of 451-ac tr in M. Hely sur, 330 ft sl 3600 ft el of sur (S. Calliham)	48	1120
Edwin M. Jones, Harry Ezzell 7 sec 20 (Ezzell Ranch)	450	2385
Texas Inland Oil Co., Chas. T. Lark 1-D, E. W. B. Scrugham sur (Jacob)	95	963
STARR COUNTY—		
Transwestern Oil Co. et al, T. B. Slick Est. 2, 2310 ft wl, 330 ft nl of sec 527 (D. D. Ranch)	†	5883
WEBB COUNTY—		
C. H. Bailey, D. G. Garcia 2, sur 786 (Killam)	100	2042
Bishop, Daubert & Lipscomb, A. M. Bruni Est. 1, sec 8 (Cole-Bruni)	150	3424
Cole Pet. Corp., Rosa Benavides 100, sec 412 (W. Cole)	*	2902
Humble, Amado S. Laurell et al 1, S. M. & S. sur (Killam)	128	2027
O. W. Killam, A. M. Bruni Est. 53, sec 8 (Cole-Bruni)	225	3438
D. G. Garcia 2 sur 786, (Killam)	215	2025
F. Perez 1, 165 ft wl, 150 ft nl of 120-ac lse out of ne cor sur 1007, (Killam)	*	2558
ZAPATA COUNTY—		
Bob & Richey, J. M. Martinez 2-A, W. A. Duke subd, blk 24 (Charco-Redondo)	2	186
Earl Callaway, Justina Garcia 8, sh 3, Fansler Partition, Comitas gr (Escobas)	*	1190
Nordan & Morris, C. Bustamante 24, sh 33, Fansler Part., Comitas gr (Escobas)	35	1220
C. Bustamante 25, sh 33 Fansler Partition, Comitas gr (Escobas)	23	1207
Texas Co., Whitehead 100, Cerrito Blanco gr (Escobas)	75	1245
CORPUS CHRISTI DISTRICT		
ARANSAS COUNTY—		
Atlantic, Porterfield Est. 1, lots 9 and 10, blk 14, McCampbell Ranch subd (McCampbell)	450	7129
Rutherford Oil Corp. et al, W. A. Schrivner 2, lots 15 and 16, blk 12 (McCampbell)	950	7129
HIDALGO COUNTY—		
Young & Bonneau, M. Diaz 1, sh 33, por 40, J. of Reynosa (Samfordyce)	*	3401
JIM WELLS COUNTY—		
John Camp Prod. Co., J. W. Bird 1, 466 ft nl and wl of n 160-ac of 425-ac tr, Los Presenos de Abajo gr (Bentonville)	*	5746
Tom Graham & Gilcrease Oil Co., F. Bennett 2-D, lot 49-64, sec 77 Haldeman subd, Seeligson Ranch (Premont)	775	2253
Texon Royalty Co., Coopwood & Ralston 2, sec 17, King Farm lots (Bentonville)	¶25	6005
Joe E. Walsh et al, W. D. Wade 2, lot 2 blk "C" (Sandia)	*	4208
KLEBERG COUNTY—		
Al Buchanan & Blanco Oil, H. C. Dennett 1, blk 18, sec 38 (Kingsville)	*	3805

Company, Well and Location	Init. Prod. Bbls.	Depth
LIVE OAK COUNTY—		
F. D. Salter et al, I. W. Griffith 2, 860 ft el, 2112 ne of No. 1, 776-ac tr, McCown Ranch, sec 20 (N. Jacob)	†	924
NUECES COUNTY—		
Atlantic, Myrtle L. Stockton 1, sec 12 (London)	*	6605
Crown Central, Page Bros. 4, 75-ac tr Page Lands sur (Saxet)	475	4862
Floboots Oil Corp., Frank Bliss 1, J. W. Stevens sur (Saxet)	975	6964
Hiawatha O&G Co., Hutchins-Stillwell 10, blk 34, Sheppard Farm lots (Saxet)	350	4875
Houston, Morgan et ux 26, Villareal sur (Saxet)	650	4426
H. H. Howell & R. B. Bryant, Rand Morgan 3 sur 416 (Saxet)	*	7005
Humble & Barnsdall, H. J. Duncan 1, lot 6, blk 41, Flour Bluff & Encinal Garden Tracts (Flour Bluff)	580	6663
Magnolia, Sevier 4, Cuadrilla Irr. Co. sur (Clara Driscoll)	375	3816
Phillips, John Harney 1, 150 ft nl & el sh 11, Harney Lands, owdd	*	6648
Potter & Snowden, Inc., Anton Kocurek 4, John Smith sur (Saxet)	150	4220
Richardson Pet. Corp., J. B. Sedwick 6, GC&SF sur (Saxet)	600	4815
Southern Minerals Corp., Bessie Elder 3, sur 311 and 312 (Saxet)	450	4877
Texon Dr. Co., Anton Ocker 9, sur 402 and 316 (Saxet)	350	4448
REFUGIO COUNTY—		
Illinois Pet. Co., Ira Heard 5, M. J. Ximinez sur (Greta)	750	5936
Nordan & Morris, Tom O'Connor 7, James Hewitson sur (Tomoconnor)	950	5925
Tom O'Connor 50-a, Swisher sur (Tomoconnor)	1206	5950
SAN PATRICIO COUNTY—		
Plymouth Oil Co., E. H. Welder 76-C, sec 70 (Plymouth)	350	5645
E. H. Welder 77-C, sec 71 (Plymouth)	750	5641
VICTORIA COUNTY—		
Barnsdall & American Liberty, Pickering-Roos, 18, SA&MG sur (Placedo)	375	4769
Harry Stekoll & G. M. Richardson et al, Mrs. K. Noll Est. 1, C. W. Vickery sur, 2000 ft se'ly nwl, 4050 ft ne'ly nel, ab 342, Mission Valley area	*	5512
Superior O&G Co. & F. A. Gillespie & Son Co., J. Hosek 10, blk 7, SA&MG sur 7 (Placedo)	175	4770
SAN ANTONIO DISTRICT		
BEXAR COUNTY—		
Jim Beard et al, Juan Barragon 5, James Simpson sur (Von Ormy)	4	665
Virginia Oil Co., A. W. Bitter 2, Jose M. Baerrera sur (Von Ormy)	4	620
CALDWELL COUNTY—		
Rio Bravo Oil Co., J. M. Merriwether 14, John Henry sur (Luling)	150	2125
Taylor Ref. Co., F. M. Branyon 4-B, Dillard Cooper sur (Branyon)	60	2232
GUADALUPE COUNTY—		
L. G. Denman, Fee 1, Wm. Arrington sur (Darst Creek)	125	2440
Ralph E. Fair, Inc., Fritz E. Hemple 1, 150 ft nl and wl of s 28-ac of 57.17-ac tr, G. W. Williamson sur (Sal Mar)	*	2240
W. E. Housel, W. R. Posey 1, Joel D. Robinson sur (Darst Creek)	*	285
La Jita Corp., Dan J. Denman 5, Wm. Arrington sur (Darst Creek)	750	2470
Ogden & Reed, Martin Hoffman 1, Green Dewitt sur (Zoboroski)	*	2495
Riddle Oil Co., Ned Herff 1, 604 ft e and 150 ft s of nw cor 50-ac lse Eligio Gortari sur, 150 ft nl of Farm, 2000 ft el of sur (Nolte)	*	2209
Saxet Prod. Co., Katie Lay 1, Jose K. Davis sur (S. Darst Creek)	30	2532
KERR COUNTY—		
S. W. Forrester, J. W. Bailey 1, 330 ft el 1280 ft nl A. L. Starky sur No. 408 (85.84-ac tr)	*	1125
MEDINA COUNTY—		
Williams & Gulley, Noonan Ranch 1, 1200 ft sl and wl H. B. Brinkhoff sur No. 318	*	350
WILSON COUNTY—		
Maryland Oil Corp. et al, Cynthia N. Trammell 1, 330 ft nel and 330 ft nwl n cor 93-ac tr M. May sur A-204	*	5611

*Failures; †Junked; ¶Million cu. ft. gas.

TEXAS GULF COAST

Jack Frazier extends Hardin 2½ miles northeast.

* * *

South Bay City extension test discovers new sand.

* * *

Old Ocean test setting seven-inch at 10,415 feet.

Houston.—Hardin field, Liberty County, was extended 2½ miles northeast when Jack Frazier completed Hanchey 1, H. B. Johnson Survey, for 25 barrels of 37.3 gravity pipe line oil per hour through a quarter-inch choke, with a tubing and casing pressure of 1000 pounds from Yegua formation at 7612 feet.

Hanchey 1 showed for a producer last week when a drill stem test made from 7488 to 7612 feet showed oil and gas. Seven-inch casing was cemented at 7600 feet.

Jack Frazier discovered Hardin field two years ago when Lynott Buffon 2 came in flowing 25 barrels of 37.8 gravity oil per hour through a quarter-inch choke after casing was perforated from 7663 to 7673 feet. Since the completion of the discovery well there have been several wells drilled in the area but all have been dry. The discovery well continued to flow around 300 barrels daily, making considerable salt water. Since completion it has produced over 250,000 barrels of oil.

One operator who has leases in the area has been paying royalty to the property owner to keep from drilling a well.

A number of major and independent operators have acreage in the area of Hanchey 1 and it is believed that a large drilling campaign will start in the district.

Frazier made location for J. Roberts 1 approximately 1½ miles east of Hanchey 1 in the center of the west 10 acres of a 20-acre tract in the H. B. Johnson Survey.

Woodley Petroleum Company made location for W. McMurtay 1, 330 feet south of the north line and 330 feet east of the west line of a 55-acre tract, or approximately 1125 feet north of the south line and 14,250 feet west of the east line of H. B. Johnson Survey. It is a southeast offset to Hanchey 1.

South Bay City Outpost Produces

South Bay City field, Matagorda County, was extended approximately 1900 feet north when a new producing sand was discovered by Hammond Exploration Company's M. Cleveland 2, E. Hall Survey. The extension well came in making 350 barrels of 41 gravity oil daily through a quarter-inch choke, with a tubing pressure of 350 pounds and a casing pressure of 400 pounds. Casing was perforated with 40 shots from 8154 to 8160 feet. The hole was drilled to 8182 feet.

United North & South Development Company's Stoddard 1, which opened a new oil field in Matagorda County the previous week, was making 152 barrels of 52 gravity distillate daily through a 11/64-inch choke, with a tubing pressure of 3350 pounds and a casing pressure of 3500 pounds. Stoddard 1 was completed at 9978 feet, being the second deepest producing well on the Texas Gulf Coast.

Sterling Oil & Refining Company's Phillips 1 indicates that it will discover Frio production approximately 1500 feet north of West Columbia field, Brazoria County. Over 40 feet of broken formation showing oil in Frio formation was cored. Seven-inch casing for a production test was being run at the end of the week.

Longest Seven-Inch String

The longest string of seven-inch casing to ever be run in the Texas Gulf Coast in on Harrison & Abercrombie's Bernard 4, C. Breen Survey, Old Ocean field, Brazoria County. At the end of the week the crew was setting seven-inch casing down to 10,415 feet for a production test. The company has cored broken sand and shale showing oil from 9900 feet to the bottom. It is reported the first perforations will be made from 10,375 to 10,415 feet. If the well is productive at this depth it will be the deepest producing in the Texas Gulf Coast. The same operator's Bernard 1-A, a workover, made 258 barrels on the first 24-hour gauge through a quarter-inch choke with a tubing pressure of 2700 pounds. The oil tested 51.2 gravity. Bernard 1-A was completed at 9835 feet.

Magnet Extended East

Magnet field, Wharton County, was extended east when the second commercial producer was completed by Texas Crusader Oil Company. Sweet 1, Smith & McKenzie Survey, made 158 barrels of 25.5 gravity oil per day through a 3/16-inch choke, with a tubing pressure of 350 pounds and a casing pressure of 300 pounds. The well was completed at 5555 feet after trying two production tests. The first time the crew tried to bring the well in the screen clogged up.

Texas Crusader Oil Company made location for Sweet 1-B, 150 feet south and 150 feet east of the northwest cor-

ner of Lot 4, Block 84, Smith & McKenzie Survey.

Atlantic Refining Company's Cockburn Fee 1, 1700 feet northwest of production at Magnet, Smith & McKenzie Survey, was preparing to reperforate casing after squeezing cement through perforations at 5533 to 5537 feet.

Atlantic Refining Company made location for Cockburn Fee 2-B, 466 feet south of the north line and 1300 feet north of Cockburn Fee 1, on a 25.17-acre tract in Lot 2, Block 84.

Marlen Oil Company's Frank Jurea 1, Needville prospect, H. & T. C. Section 26, Ft. Bend County, was shut down at 6523 feet after blowing out. The operators were down to contract depth when the wildcat blew out and showed gas. It is reported that the company may carry the test deeper.

Turtle Bay Outpost Produces

Approximately 1000 feet north of production at Turtle Bay field, Chambers County, Stanolind Oil & Gas Company completed Davis 1, S. Burney Survey, flowing 65 barrels in three hours through a quarter-inch choke, with a tubing pressure of 850 pounds and a casing pressure of 1150 pounds. The hole was drilled to 6625 feet and top of broken sand showing oil was encountered around 6613 feet. Top of oil sand was logged at 6620 feet; seven-inch was set at 6601 feet.

Approximately 8000 feet east of Anahuac field, Chambers County, Humble Oil & Refining Company abandoned W. L. Garth 1, T. & N. O. Survey 68, at 7800 feet after coring salt water sands in the regular producing horizon. Garth 1 logged top of the Discorbis at 6370 feet, Heterostegina 6846 feet, and Marginulina at 7161 feet. The well was about 150 feet lower than other wells in the main part of the field.

Humble Pipe Line Company is laying a new eight-inch line from Anahuac to Baytown and looping the old six-inch line. The company is also laying a new eight-inch line from Satsuma station, north of Houston, to Baytown. This line will carry methane and gasoline from East Texas field. Heretofore, the gasoline line went to Webster tank farm and then to Baytown. The new eight-inch line will cut off considerable distance. The line which was used to carry gasoline to Webster tank farm will be converted into a crude oil line.

Cheek Discovery Making 390 Barrels

On a 22-hour production test, Magnolia Petroleum Company's Phelan 1, discovery well for the Cheek field, S. Stivers Survey, Jefferson County, made 390 barrels of high gravity distillate through a quarter-inch choke. Tubing pressure was 2800 pounds; casing, 2950 pounds. Phelan 1 was completed at 8460 feet after plugging back from 8602 feet. The Cheek field is approximately three miles southwest of Amelia field, Jefferson County.

Three wells at Silsbee field, Hardin County, are being swabbed in for production tests. Republic Production Company's Brooks 13, G. W. Brooks Survey, was being swabbed at 6980 feet after seven-inch casing was cemented at 6975 feet. The same company's Brooks 16, 2000 feet east of production, J. A. Williams Survey, was being swabbed at 6915 feet after seven-inch casing was set at 6898 feet. Humble Oil & Refining Company's Kirby 1, J. Ellery Survey, was being swabbed at 6986 feet. If the well is a commercial producer Humble will be the first company other than Republic Production Company to obtain production at Silsbee.

Segno Extended 932 Feet

Segno field, Polk County, was extended 932 feet east last week when Humble Oil & Refining Company completed Kirby Lumber Company B-4, M. Victor Survey, at 5335 feet. The test came in flowing 508 barrels of 47.5 corrected gravity pipe line oil daily through a quarter-inch choke, with a tubing pressure of 700 pounds and a casing pressure of 800 pounds. The hole is bottomed in oil sand at 5335 feet. Top of the sand was 5320 feet. Seven-inch casing was cemented at 5320 feet. The company is making location for Kirby Lumber Company B-5, 933 feet north of Kirby Lumber Company B-3, M. Victor Survey.

On the south flank of Hull field, Liberty County, Hamil & Smith completed Barngrover et al 1, J. Devore Survey, after perforating casing at four different levels with 110 shots. The well was placed on pump and made 211 barrels daily.

It was drilled to 6631 feet and seven-inch casing was set at 6000 feet. Casing was perforated from 5705 to 5718 feet with 30 shots, with 10 shots from 5732 to 5738 feet, 60 shots from 5750 to 5770 feet, and 10 shots from 5790 to 5806 feet. All four levels are deeper than another producing sand yet found at Hull.

Another failure for Splendora was reported last week when C. E. Gates' Texas Long Leaf Lumber Company 1, Walker County School Land Survey, Montgomery County, was abandoned at 6251 feet in salt water sand. Salt water was also shown in the Conroe sand from 5750 to 5756 feet. Top of the Cockfield was picked up at 5700 feet.

Swabbing at Joe's Lake

West of the discovery well, Republic Production Company's Hurd 3, N. Hurd Survey, Joe's Lake field, Tyler County, was being swabbed at the close of the week. The hole was drilled to 7640 feet and a drill stem test from 7632 to 7640 feet showed 12 joints of oil and 160 pounds pressure. If the well is a commercial producer it will be the second at Joe's Lake.

Republic Production Company is laying 15 miles of six-inch pipe line from Joe's Lake to Silsbee.

Houston Oil Company and Republic Production Company announced location on the Bunker Hill prospect in Newton County last week. Sabin Tram Company 1 is 2016.7 feet west and 2107.8 feet north of the southeast corner of H. & T. C. Survey 35. This prospect was worked with reflection seismograph and torsion balance by Humble Oil & Refining Company and Houston Oil and Republic Production Company in 1934 and 1935.

Four thousand feet south of the discovery well at Clinton field, Harris County, Stanolind Oil & Gas Company abandoned Oates 1 after drilling to 8783 feet, plugging back, and making a series of production tests. While drilling to 8783 feet the well attempted to blow out a number of times. The hole was plugged back. Tests made at 8095 feet failed to show anything. The hole was then plugged back to 6600 feet, where the extension well showed salt water. The last drill stem test made from 5755 to 5760 feet, showed 49 stands of salt water and six stands of mud in 30 minutes through quarter-inch chokes.

Stanolind Oil & Gas Company is moving material back to the discovery well to rework it. It came in making gas and distillate and then died.

TEXAS GULF COAST
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ANAHUAC—		
Humble, Lord 3	196	7110
Zappe 8	360	7101
BARBERS HILL—		
Sun, Smith 3	192	5350
CLEVELAND—		
Gulf, Kirby C-18	450	5880
CLINTON—		
Stanolind, Oates 1	*	8783
DICKINSON—		
Humble, Maco Stewart 8-B	72	8306
Pan American, Craig 3	¶2	9000
Bennett & Kenco, G. H. E. RR. 1	*	8684
GOOSE CREEK—		
J. D. Clay, Wright 3	132	1916
HASTINGS—		
Humble, Brown 13	624	6090
Haden 3	498	6113
Stanolind, Edwards 3	627	6080
Grote 3	666	6080
McKibben 3	655	6055
Moore & Rasmussen 2	338	6098
Surface 4	547	6080
LOCHRIDGE—		
Gulf, Gibson 2	250	6375
Reiss 2	440	6370
MAGNET—		
Texas Crusaders, Cockburn Fee 1	158	5555
OLD OCEAN—		
Harrison & Abercrombie, Bernard 1-A (wo), dr to 10,053 ft, pb and comp at 9835 ft	258	9835
TURTLE BAY—		
Stanolind, Davis 1	581	6625
FT. BEND COUNTY—		
Earl Trone, Trone 1, Long Point area, H&TC sur 67	¶½	909
JEFFERSON COUNTY—		
Magnolia, Phelan 1, Cheek prospect, St. Stivers sur	432	8460
MATAGORDDA COUNTY—		
United North & South Development Co., Stoddard 1, sw of Buckeye field, Cotton sur	152	9978
MONTGOMERY COUNTY—		
C. E. Gates, Texas Long Leaf Lumber Co. 1, Splendora prospect, Walker County School Land sur.	*	6251

*Failures; †Junked; ¶Million cu. ft. gas.

Commission issues 285 Texas permits

Austin.—The Texas Railroad Commission approved last week permits for drilling 285 new wells in Texas, 197 less than were allowed the week before.

In East Texas field there were only four new locations, two in Gregg County, one in Upshur County, and one in Rusk County. East Central Texas district reported 31 locations, including 10 in Titus County.

West Texas reported 68 permits with 18 in Winkler County, 15 in Ward County, and 12 in Upton County. Panhandle area reported 21 permits.

There were 50 locations from the North Texas district, including 15 in Young County and 12 in Archer County. West Central Texas listed 18 scattered locations.

There were 47 permits for wells in Southwest Texas district, 11 being in Zavalla County. The Gulf Coast reported 46 permits.

SOUTH LOUISIANA

Commercial production established at Long Lake.

* * *

Four sand bodies indicate extension for Lafitte.

* * *

John Mayo's wildcat reported runing 300 feet high.

Lake Charles.—Fohs Oil Company & Pilgrim Exploration Company opened a new oil field in the Louisiana Gulf Coast June 22 when State Long Lake 1, Section 65-17s-19e, Lafourche Parish, came in flowing 36 barrels of 38.3 gravity oil per hour from Miocene sand at 9365 to 9373 feet. On the first 24 hour gauge State Long Lake 1 made 890 barrels through a quarter-inch choke with tubing and casing pressures of 1400 pounds.

At the end of the week the test sanded up and Christmas trees were being changed. It was believed flow valves became clogged with sand as the chokes could not be adjusted. Another production test will be given the well.

State Long Lake 1 indicated it would open a new field several weeks ago when oil sand was logged from 9368 to 9406 feet. When the bit stopped at 9406 feet it was still in oil sand. Seven-inch casing was set at 9389 feet and was perforated with 20 shots at the producing sand.

Prior to perforating State Long Lake 1 was shut down for some time for repairs. Cement was reset and then the production test was made. The crew started washing the discovery well the night of June 21 and at midnight the well was turned into burning pits through a two-inch choke. The chokes were later reduced to ¾, ½, and ⅜-inch size. Casing pressure was 700 pounds. The well was estimated making 36 barrels per hour. The morning of June 22 State Long Lake 1 was making 35 barrels per hour of fluid, mud and washwater, no salt water, through a quarter-inch choke. At a later gauge the well made 36 barrels per hour of fluid, 90 percent 38.3 gravity oil and the balance wash water.

Is Second Strike for Fohs

Long Lake is the second strike for Fohs Oil Company in the Louisiana Gulf Coast, the first being English Bayou, Calacasieu Parish. Fohs Oil Company and Pilgrim Exploration Company control around 7000 acres in the Long Lake area, while Gulf Oil Corporation and Shell Petroleum Corporation have scattered acreage in the district. Fohs Oil Company & Pilgrim Exploration Company also have leases on nearly all the water ways in this district.

Long Lake Prospect was discovered by reflection seismograph by the two companies. After working the district with geophysical instruments they were so sure of commercial production at Long Lake that they ordered a drilling barge for subsequent locations before operations were even started on State Long Lake 1, which was drilled on piling. The operators even went so far as to buy a production string of casing in advance and surface connections. The operators planned the development of Long Lake before it was even discovered.

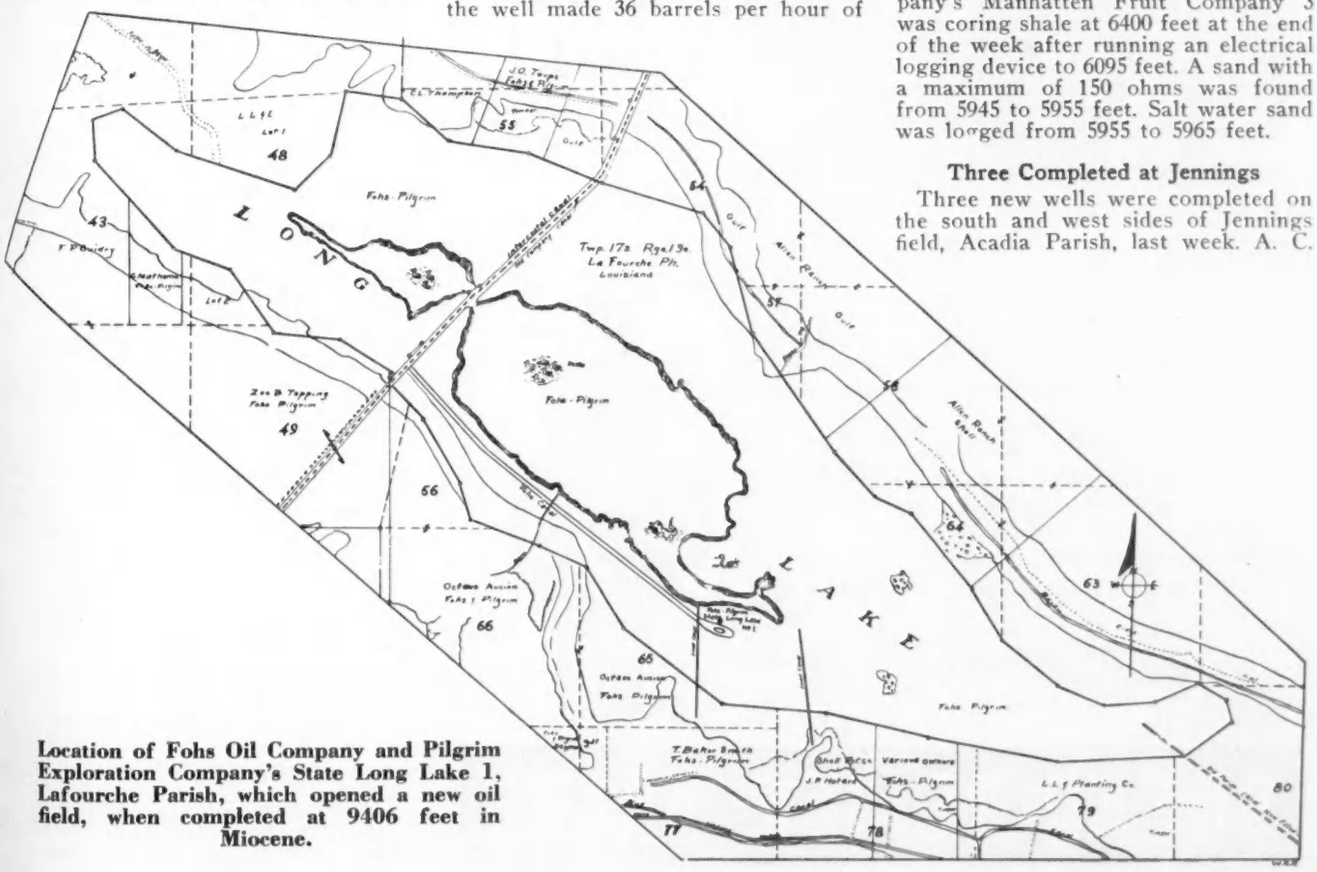
Outpost Will be Perforated

Southeast of production at Lafitte field, Jefferson Parish, The Texas Company was waiting on cement to set in Rigolets 7, Section 29-17s-24e, at 10,406 feet. A string of 7⅝-inch casing was set. Rigolets 7 cored sand showing oil at 9329 to 9357 feet, 9525 to 9568 feet, 9900 to 9942 feet, 9950 to 9973 feet, and broken formations showing oil to 10,406 feet. After cement has hardened around the casing the hole will be perforated for a production test.

At Venice Dome, Plaquemines Parish, Tide Water Associated Oil Company's Manhatten Fruit Company 3 was coring shale at 6400 feet at the end of the week after running an electrical logging device to 6095 feet. A sand with a maximum of 150 ohms was found from 5945 to 5955 feet. Salt water sand was logged from 5955 to 5965 feet.

Three Completed at Jennings

Three new wells were completed on the south and west sides of Jennings field, Acadia Parish, last week. A. C.



Location of Fohs Oil Company and Pilgrim Exploration Company's State Long Lake 1, Lafourche Parish, which opened a new oil field, when completed at 9406 feet in Miocene.

Glassel's McFarlane 1 made 600 barrels of pipe line oil daily through a 3/8-inch choke from sands at 6758 to 6808 feet. Seven-inch casing was set at 6699 feet. The same operator's Trushell 2 made 698 barrels of 39.4 gravity pipe line oil through a 15/64-inch choke, with a tubing pressure of 1300 pounds and a casing pressure of 1100 pounds from 7156 feet. Sand showing oil was encountered from 7041 to 7156 feet. Seven-inch casing was set at 7034 feet. Superior Oil Producing Company completed the third well: Jennings Heywood 3 made 367 barrels in 12 hours through a quarter-inch choke, with a tubing pressure of 1240 pounds and a casing pressure of 1210 pounds at 6754 feet. Top of oil sand was logged at 6530 feet and seven-inch casing was set at 6529 feet.

Two new locations were made on the southwest of Jennings by Glassel. Trushell 3 is 100 feet south and 275 feet west NEc SE Section 42-9s-2w. M. Bergeaux 1 is in the center of the east two-acres of Lot 4 in the south half of Section 41-9s-2w. It is 300 feet from McFarlane 1.

Wildcat Running High

East of Tepetate field, Acadia Parish, John Mayo et al's Bank of Commerce 1, Section 19-7s-1e, was drilling below 6019 feet at the end of the week and is reported to be running high on structure. Some geologists are picking the well to be over 300 feet higher than normal.

North of production at Tepetate, Continental Oil Company's Macabbees 2, Section 22-7s-2w, was dry and abandoned at 8202 feet. Salt water sand was logged from 7770 to 7780 feet. The well penetrated Heterostegina formation at 6647 feet.

Approximately a half mile north of the discovery well at South Jennings, Jefferson Davis Parish, Stanolind Oil & Gas Company abandoned Calcasieu National Bank 2, Section 10-10s-3w, at 9180 feet. Salt water sands were logged at the producing horizon. The well is over 70 feet low on structure.

On the South Lake Charles prospect where Union Sulphur Company drilled three dry holes, Stanolind Oil & Gas Company made location for Prairie Land and Canal Company 1, 300 feet south and 660 feet east NWc SW of Section 10-11s-9w. The wildcat is southwest of Union Sulphur Company's three dry holes. The company has around 6500 acres in this area, which was worked with reflection seismograph in 1936.

In Cameron Parish, Humble Oil & Refining Company's Bell Hanszen 1, Section 5-12s-6w, was running 9⅝-inch casing at 7637 feet to protect the hole. Evidently the company intends to make a deep test out of Bell Hanszen 1. A string of 13⅜-inch casing was set at 3016 feet.

Mongouloi Test Attempts Fail

The Texas Company last week attempted two drill stem tests on State Mongouloi 3, Section 14-10s-9e, and both failed. At the close of the week the crew was going in for the third drill stem test at 7826 to 7850 feet. The well cored oil sand from 7798 to 7804 feet and from 7826 to 7850 feet. If the drill stem test shows oil then casing will be run for a production test.

Tide Water Associated Oil Company has two wells at St. Martinville field, St. Martin Parish, below the regular producing sand. Smedes 1 was down to 9648 feet in heaving shale and fishing for stuck drill pipe at 9625 feet. The Smedes 4 was reaming to run an electrical logging device at 5650 feet after missing the 5550-foot producing sand.

Jefferson Lake Oil Company's Lake Peigneur 414, Jefferson Island Dome, 12s-5e, Iberia Parish, was coring ahead below 6646 feet after logging sand showing oil from 6480 to 6520 feet and from 6626 to 6628 feet. Five-inch casing is on the racks and will probably be run after drilling deeper.

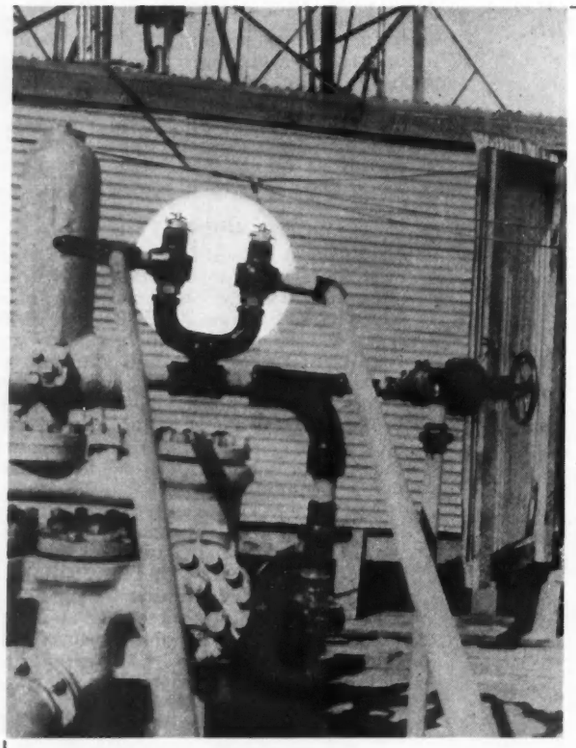
In the Patoutville area, Iberia Parish, Hamil & Smith's Dave Baez 1, Section 35-12s-7e, was abandoned at 7962 feet, but it is rumored the company will drill this well down to 10,000 feet in the future. The rig has been moved.

Louisiana Crusader Oil Company's Langley 1, Fenton area, Jefferson Davis Parish, was running seven-inch casing to 9045 feet after coring several gas sands down below 8985 feet. Salt water sand was logged at the bottom of the hole.

To hold Barbacoas hearing on July 6

Austin. — The Railroad Commission has issued notice of a hearing in Austin July 6 on the Barbacoas field in Starr County.

Particular consideration will be given to the pressure problems in the field. Other field rules also will be discussed.



When the ½c nail shears

A Costly pump part is saved!

Pictured here is the protection a leading contractor is providing for his slush pumps on a New Mexico location. The SHEAR-RELIEF Valve will not permit pump pressure to exceed the set point. The nail shears at that point, the valve instantly opens, and fluid is relieved through exhaust line. The valve is quickly reset with another nail, and the sheared nail is the only damage. Safe, sure protection like this is why so many operators have made the SHEAR-RELIEF Valve standard equipment on their pumps.

FLUID-PISTON SLUSH PUMPS
ABERCROMBIE PUMP CO.
GULF BLDG. HOUSTON TEX.

SHEAR-RELIEF VALVE

NORTH LOUISIANA

Two-mile Rodessa extension carries field into Arkansas.

* * *

Lisbon extended; new field in Bull Bayou section.

Shreveport.—An oil producer half a mile north of the Arkansas line in Miller County, extending the producing limits of the Rodessa field two miles northward and making it a tri-state pool, was definite last Thursday when W. L. McClanahan et al's Capps 1, SE SW Section 11-20-28, began to flow oil following treatment with 3000 gallons of acid.

During an 18-hour gauge it made 585 barrels through a small opening in the gate valve. The oil is 41 gravity.

The treatment was made after about four days of swabbing operation which yielded some oil with mud, but showed lack of gas. Bottomed at 6113 feet, operators are testing saturation found from the Mitchell sand, pay of the northwest Rodessa extension area, logged from 6084-96 feet. Seven-inch casing was set at 6016 feet.

In making the treatment with acid, 135 barrels of crude was used, and any prediction of the outcome of the well was being held until this amount of oil was recovered. Before treatment, many operators rated the well as a satisfactory pumper.

Rodessa Proper Quiet

The Rodessa field, itself, had an unusually quiet period last week, with only routine work reported. In the gas part of the field, R. W. Norton's Payne 1, Section 27-23-16, continued to stretch the North Louisiana-Arkansas drilling depth record as it cored near the 11,000 foot level as the week ended.

In the northwest extension area on the Louisiana side of the field, J. Edward Jones was testing Parker 1, SW SW Section 4-23-16, at 6030 feet, on the edge of production. One location west of production in this area, Surf Oil Company reached the producing zone and set casing in Allison 1, Section 8-23-16, at 5950 feet.

In the five-mile strip between Holcomb & Thomason et al's Henderson 1, oiler north of Jefferson, and the recently completed eight-mile southwest extension of the Rodessa field of the Hunter Company at Fonda 1, A de los Santos Coy Survey, R. C. Davenport was issued drilling permit for Mrs. J. Schellinger 1, on a 10-acre tract in the J. Hanks Survey.

SOUTH LOUISIANA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BLACK BAYOU—		
Shell, Watkins 39	*	4908
ENGLISH BAYOU—		
Union Sulphur, Kauffman 5	260	7052
GILLIS—		
Union Sulphur, Mayo Reeves 6 (will use well as a repressuring test)	..	6851
JEANERETTE—		
Herton Oil Co., Roane & Banta 2	862	6649
JENNINGS—		
A. C. Glassel, McFalane 1	600	6808
Trushell 2	698	7156
Superior, Jennings Haywood 3	734	6754
LEEVILLE—		
Gulf, Allen Land Co. 12	450	3785
NEW IBERIA—		
William Helis, Bullock 5	632	5146
SOUTH JENNINGS—		
Stanolind, Calcasieu National Bank 2	*	9180
TEPETATE—		
Continental, Maccabbees 2	*	8202
WEST HACKBERRY—		
Sutton Oil Co., M. Duhon A-2	472	4699
CAMERON PARISH—		
Southern Oil Co., State 2, 15s-10w	*	2611
IBERIA PARISH—		
Hamil & Smith, D. Baez 1, Patoutville area, 35-12s-7e	*	7962

*Failures; †Junked; ¶Million cu. ft. gas.

New field is indicated six miles south of Bull Bayou

Shreveport.—A new North Louisiana oil producing area in DeSoto Parish was indicated likely last week at Pullman Oil Company's Ramsey A-1, SW SE SE NW 36-11-11, about six miles south of the old Bull Bayou field, after the good showing it made on a drill stem test from 2930-61 feet. Some rate the well at 500 barrels daily.

With ½-inch chokes on top and bottom, the test, open 14 minutes, showed: top joint and half oil cut with mud, next 22 joints clean oil, and bottom joint and half mud with slightly salty taste. Pressure built up to 48 pounds during the test.

Operators prepared immediately to run seven-inch casing. First determination of the producing horizon is Paluxy, the regular pay zone of Bull Bayou. Although from the same zone, it is not being connected with the Bull Bayou structure as there are several low dry holes between it and the well.

Ramsey A-1 offsets a test drilled last year to below 3000 feet which started flowing several months ago. Operators went back into the old hole to make a test, but twisted off part of drill pipe while reaming down to set pipe.

With elevation of 226 feet, Ramsey

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SHREVEPORT, LOUISIANA
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New Iberia—Rodessa—Monroe—Cotton
Valley—Turnertown—Greggton—Houston

A-1 logged top of Nacatosh at 1208 feet; base of chalk and top of Wolf City at 1810 feet and top of Austin at 2596 feet. Contact of the upper and lower Cretaceous is placed between 2800-2850 feet. The well had a show in a core at 2836 feet, but drill stem test from 2836-2935 showed only a little gas and a trace of oil. The oil is 37.9 gravity.

28 Louisiana permits

Shreveport. — Twenty-eight drilling permits were authorized last week in Louisiana by the minerals division, state department of conservation. Of these, 18 were in North Louisiana.

Gulf extends Lisbon half mile northwest

Shreveport.—New interest developed last week in Lisbon pool of Claiborne and Lincoln Parishes with a half mile northeast extension of the field's limits by Gulf Refining Company's J. J. Henry 1, NW NE Section 31-21-4, flowing 720 barrels in 24 hours through ¼-inch choke from 20 feet of pay from 5193-5213 feet.

A half mile outpost to the north, however, at T. L. James & Co.'s Baker 1, Section 25-21-5, looked disappointing as the well cored below the Lisbon pay zone after drilling through or failing to encounter saturation. The well was to go to about 5325 feet and then run an electrical log to determine whether the pay was missed.

Five other completions were reported in addition to the Gulf extension. Among new locations, five operations were staked south of the discovery oiler.

Eight miles southeast of Lisbon production, the Lincoln Parish wildcat Glassell & Glassell's Gray 1, Section 16-20-3, was waiting orders at 5620 feet after failing to find any shows 300 feet into the Travis Peak section. The test found the Lisbon level dry.

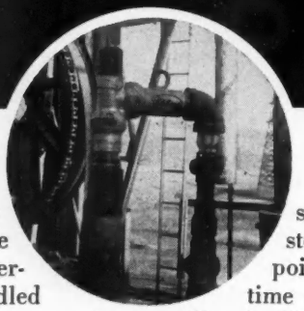
Three and one quarter miles southwest of Lisbon production, J. R. Bevill et al's Edmond 1, Section 16-20-5, was drilling at 4655 feet.

NORTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CADDO PARISH (Pine Island)—		
Paul Cooper, Rodgers 2, 11-20-15	60	2204
Custer Oil Co., F. E. Wemple 1, 14-20-15	50	2206
Stanolind, Dillon Heirs 123, 14-21-15	55	1670
CADDO PARISH (Rodessa)—		
Standard of La., L. J. Kaempfer 2, 9-23-16	185	5988
United Gas, Starck 2, 9-23-16	504	5955
CLAIBORNE PARISH (Lisbon)—		
J. B. Bond, Patton 2, 36-21-5	650	5285
DeArman & McMillan, Vaughn 2, 36-21-5	825	5284
Gulf, J. J. Henry 1, 31-21-4	800	5214
Harry Hanburry, McDonald 1, 31-21-4	600	5270
Holleyfield & McFarlane, M. Patton 1, 31-21-4	625	5322
Lyons & Neely, J. D. Caruthers 1, 6-20-4	500	5320
MOREHOUSE PARISH (Monroe)—		
United Gas, Crossett 47, 36-22-4e	¶9	2228
OUACHITA PARISH (Monroe)—		
J. & H. Oil Co., Frost A-2, 36-19-3e	¶3	2142
SABINE PARISH (Converse)—		
Whitehurst & Myers, S. Brown 1, 16-9-13	65	1530
UNION PARISH (Monroe)—		
Interstate Nat. Gas, Fee 64, 29-21-4e	¶15	2142

*Failures; †Junked; ¶Million cu. ft. gas.

Here's something new...
THE CHIKSAN "POOR BOY'S" SWIVEL



THINK of the many times you've wished for a feather-weight, easily handled swivel for odd jobs around a rig . . . one to safely withstand tremendous pressures while giving continuous 360 degree rotation . . . one with nothing to tighten and nothing to get out of order!

The Chiksan "Poor Boy's" Swivel meets these requirements and more, too, for in addition it has an easily capped opening through which wire line instruments can be raised or lowered in the drill pipe while maintaining complete circulation and rotation in the well.

There are a thousand and one money saving jobs for this swivel around a rig. For instance:

Use the "Poor Boy's" Swivel to wash through bridges and other obstructions while going back to bottom with the drill pipe. It handles far faster than the regular swivel, and permits using full stands of pipe instead of doubles . . . points that are decided time savers!

Use the "Poor Boy's" Swivel to maintain circulation in the well while running wire line instruments through the drill pipe. It allows complete circulation and rotation of the drill pipe while the wire line is in the hole and eliminates danger of sticking pipe. Use the "Poor Boy's" Swivel as a standby in times of emergency. It enables circulation and rotation to be maintained while repairing regular drilling swivel, blocks, drilling lines or other rig equipment without coming out of hole.

Progressive operators have been quick to adopt this new member of the famous Chiksan family, and report enthusiastically on the many uses they have for it. Get in touch with your nearest Chiksan representative today for complete information on the "Poor Boy's" Swivel. You'll find it the slickest thing in many a moon!

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ARKANSAS FIELDS

Fourth Schuler well killed to plug off salt water

El Dorado. — South Arkansas' new producing area at Schuler, Union County, 14 miles west of ElDorado, added its fourth oil producer last week in Lion Oil Refining Company's Morgan B-1, Section 18-18-17, southeast offset to the field discovery. The well was killed a couple of days after completion and the bottom of the hole plugged after it began to show salt water with its production.

Completed from a deeper sand than the other three producers, in which casing was perforated from 5797-5826 feet, the well was making 70 barrels of oil and 30 barrels of salt water through ½-inch choke when operators decided to plug bottom, drill out part of the plug and reperforate. It was due for re-completion during the week-end.

14 Drilling In Field

There were 14 active operations underway as the week closed. Deepest of these was Alice Sidney Oil Company's Powl-

edge 1, SW SE Section 7-18-17, half a mile north of production.

East of Schuler, also in Union County, Mid-Continent Petroleum Company is busy assembling acreage on a recently "shot" high around Section 19-18-16. Centering around Section 12-19-16, Grimes Brothers of El Dorado have taken over the block formerly owned by V. V. Bull et al and plan to deepen the S. L. Robins 1, Section 12, which has surface pipe set.

In Ashley County, Howard W. Morris has assembled a spread of 10,000 acres around Hamburg in Township 18 and 19, Range 4, on which a test is planned. In Chicot County, in the extreme southeastern corner of the state, E. C. Montgomery is taking a block around Ttownship 19, Range 1 west.

Plug back Troy deep test to complete in upper zone

El Dorado.—In the recently opened shallow Troy field of Nevada County, Arkansas, Benedum-Trees Oil Company was plugging back Groves 1, Section 10-14-20, to the pay zone of the field after giving up the well as a deep failure at 6147 feet. Elevation is 353 feet.

It bottomed in anhydrite and had top of the "big lime" at 5144 feet, cored porous lime carrying salt water from 5144-55 feet. Base was logged at 5394 feet and top of salt was logged at 5510 feet.

Discovery of anhydrite below Permian salt was a surprise to many South Arkansas operators, and is expected to cause an adjustment of theories.

In Hempstead County, E. H. Moore, Inc., abandoned Porterfield 1, Section 21-14-25, at 4515 feet.

Ambitious leasing campaign in southwestern Mississippi

Jackson.—An ambitious lease buying campaign has been waged for some weeks in southwestern Mississippi on a general trend between Hattiesburg and Natchez. Majors are credited with the bulk of the purchases, which originally involved 25-cent per acre cash bonus, but have since advanced to $2 in some of the most popular areas. The campaign is predicated on a basin theory, with deep seated salt domes being forecast by extensive geophyiscal operations.

First sand section of the Wilcox series put in its appearance the past week on Sun Oil Company and Wanette Oil Company's Mrs. K. Talley 3, 33-4n-15w, fourth prospect on the Scanlan salt plug, Lamar County, while coring at 4012 feet. Top of the series was logged at 2511 feet, with an elevation of 388 feet.

ARKANSAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
HEMPSTEAD COUNTY—		
E. H. Moore, Inc., Porterfield 1, 21-14-25	*	4515
LITTLE RIVER COUNTY—		
Strahan et al, Dierks Lbr. Co. 1, 21-12-28	†	2354
UNION COUNTY—		
Alice Sidney Oil Co., Morgan 1, 18-18-17	1510	5570
Marine Oil Co., Thompson E-6, 10-18-13	40	3585

*Failures; †Junked; ¶Million cu. ft. gas.

Shallow Wyoming strike is of major importance.

* * *

Lance Creek has deep drilling campaign underway.

Casper, Wyo.—Strike of the Wyoming Southern Oil Company at shallow depth in the West Shawnee area 15 miles east of Douglas, Converse County, Wyoming, and railhead continued to hold front place in Rocky Mountain oil news this week. A short pumping test of the well Jennie Evert 1, NWc SW 26-32n-69w, showed 12 barrels per hour, but it is not indicative as oil had risen 360 feet in hole from 561 feet after standing five days. This level was lowered 200 feet in pumping, and estimates place the well at from 25 to 35 barrels daily.

An increase in gas pressure occurred as the well cleaned out and drilled itself in, so that it was shut down and pumping equipment pulled to set packer in hopes that it will flow. Meantime work is starting on Salisbury 1, CS½ NE 26-32n-69w, an offset.

Crude from the Everet well analyzed 24.8 gravity and 6.9 percent gasoline, 8.4 percent kerosene, 15.2 percent nonviscous neutral, 30.4 percent wax distillate, and 40.4 percent residuum. While the gasoline content is low in the shallow Shawnee paraffin-base oil, it is reported to be good crude for lubricating oils.

Three Feet of Sand

Production was developed in the three feet of stray sand drilled. Hole bottoms in sand, and the same sand logged in other Shawnee wells showed a thickness of 28 feet. The sand was topped at 558 feet. Sand is believed to be a stray at the contact of the Tertiary and Cretaceous beds. Wyoming-Southern Oil Company had completed two wells near the Jennie Everet 1, which gauged initials of 7,500,000 cubic feet each at shallow depths.

Discovery at Shawnee is expected to stimulate activity in the southeastern part of the Powder River Basin. The Shawnee structure is located on the southeastern rim of the basin and midway between Lance Creek and the Big Muddy fields. Several companies have assembled large drilling blocks in the area. Among these Carter Oil Company and the Phillips Petroleum Company have a block extending along Range 73

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National Bank of Tulsa Building

Tulsa, Oklahoma

west from Township 40 north to Township 49 north. The block extends through the Pumpkin Buttes structure with the anticline forming in the Wasatch beds of Tertiary age. This structure has been geo-prospected and will be drilled this summer.

Near Douglas and west of Shawnee, Stanolind Oil & Gas Company holds several thousand acres which it plans to study by the seismograph this summer. On the Irvine structure, Elbe Oil & Land Development Company of California holds 10,000 acres, on which it has moved in rotary equipment and plans to spud this summer. The Irvine structure adjoins Shawnee on the west.

On the Beaver Creek structure, Thomas H. Carney of Oakland, California, has assembled a large block extending through three townships and immediately to the west of the Lance Creek field. Carney plans the drilling of a deep well on the Beaver Dome structure which this acreage covers.

Immediately to the north of the Lance Creek field, Fred Goodstien and associates have leased nearly three solid Townships and plan a test following a geophysical survey.

Fifteen miles west of Lance Creek and 20 miles north of Shawnee, Lester M. Esterline and associates have leased nearly 10,000 acres covering the Box Creek structure, where they plan to drill a test.

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600 - 650 South Clarence Street . . . Los Angeles, California, U. S. A.
Complete Stocks Maintained In Our Warehouses At: 2311 West Street, Houston, Texas. 1008 S.E. 29th Street, Oklahoma City, Oklahoma. Sold in the Mid-Continent and Gulf Coast by: Continental Supply Co., and T. T. Word Supply Co., Inc., Houston, Texas — In All Their Stores.
Export Office: Continental Emsco Co., 30 Rockefeller Plaza, New York City.

In the Shawnee area beside the Wyoming Southern, Chadron Osage Oil Company holds nearly 12,000 acres and is drilling a deep test of the structure, State 1, SW SW SW 16-32n-69w, which is drilling at 3660 feet.

North of the Big Muddy field, General Petroleum Corporation has blocked an acreage covering the Coal Creek structure. The structure has been thoroughly studied by geophysical methods, and the company plans a deep test of this Powder River Basin anticline this year.

North of Wertz Field

An interesting Wyoming wildcat location was released this week by Ohio Oil Company. Test is Wyoming Oil & Gas Company 1, SE SW 29-27n-89w, on the Bunker Hill structure, immediately to the north of the Wertz field, Fremont County, Wyoming. It is to be a shallow test for gas in the Shannon sand. In 1931 Prairie Oil & Gas Company abandoned a deep test on Bunker Hill at 6900 feet in the top of the Sundance (?) which was reported to carry water. It is thought that Ohio Oil Company may make a deep test at Bunker Hill to the Tensleep sand which yielded an 1800-barrel well in the Wertz field to the south when drilled the past December by Sinclair-Wyoming Oil Company.

Deep Drilling at Lance Creek

Following completion two weeks ago of Ohio Oil Company's Leo 5-OPC-16 for 1850 barrels of 42 gravity crude, paraffin base, at 5516-37 feet a deep drilling campaign to the Minnelusa formation is underway in the Lance Creek field. Ohio Oil Company has three tests underway to the deep formation: Leo-OPC-7, NWc NW SE 25-36n-65w, drilling at 1850 feet; Leo 2-OPC-7, NEc NE SE 35-36n?65w, rigging up rotary; and Taylor 2-OPC-32, NWc NW SW 3-35n-65w, drilling at 2020 feet. The company's Lamb 10-Account 2, NE SE 5-35n-65w, a Sundance test, is moving in material. All these will require Continental Oil Company to drill offsets.

Sinclair - Wyoming Oil Company opened up its 1937 drilling campaign in Wyoming this week. It is drilling at 115 feet in Wretz 11-A, SE NW NW 7-26n-89w, and deep test to the recently

MOUNTAIN STATES Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MONTANA		
GLACIER COUNTY (Cut Bank Field)—		
O. E. Lee, Davis 1, cs se 15-32n-6w	10	3340
Texas Co., Lennon 1, cnw se 24-33n-6w	11	3050
TOOLE COUNTY (Kevin-Sunburst Field)—		
Rimrock Oil Co., Schmidt 2, sw sw 29-35n-3w	200	1789
Consolidated Gas Co., Fee 6, w sw ne 29-35n-2w	150	1501
Chab Oil Co., Government 1-B, 051353, cse nw 30-35n-2w	30	1585
McKnight & Stock, State 2, nw nw nw 16-25n-2w	3	1615
New Era Fuel Corp., Goedderts 1, ne sw 12-25n-3w	2	1813
WYOMING		
CONVERSE COUNTY (West Shawnee Creek Field)—		
Wyoming Southern Oil Co., Jennie Evert 1, nwc sw 26-32n-69w	288	561

*Failures; †Junked; ¶Million cu. ft. gas.

proved Tensleep horizon in the Wertz gas field, Carbon County.

Joint with the California Company, The Texas Company's Unit 1, 590 feet north of the south line and 910 feet west of the east line of the SE NW 35-3n-94w, deep test to the Sundance formation in the Wilson Creek structure, Rio Blanco County, northwestern Colorado, is rigging up rotary. Location was made on recommendation following a seismograph survey. Two failures have been drilled on Wilson Creek in years past.

Yielding hot salt water, oil scum, and a small show of gas, test the 8⅝-inch casing set at 5245 feet and hole bottomed at 5330 feet, the Mountain Fuel Supply Company's third well on Powder Wash, Moffat County, Colorado, Donnell 1, NE SE 21-12n-97w, proved a disappointment and is coring at 5336 feet feeling for another sand in the Wasatch series. Joint test of Italo Petroleum Corporation and Universal Consolidated Oil Company, Wanner-Government 1, SE NE 32-12n-98w, an offset to the Donnell well, is rigging up rotary.

A large well was completed in the Cut Bank field, Glacier County, northern Montana, this week. The Glacier Production Company's Neill 2, NE NE NE 20-33n-5w, swabbed 450 barrels initial from the 2935 to 2991 feet.

EASTERN FIELDS

Clay County field well is rated at 2000 barrels.

* * *

Set initial gas production record for Oriskany.

Pittsburgh. — Pure Oil Company's Sarah M. Bechtel 1, western offset to its Bunny Travis 1, Clay County field, Basin area, Illinois, gave indication of 2000 barrels daily initial production when placed on production early this week. Bottomed at 2960 feet, it is producing from McCloskey sand. The Travis well had initial production of 2500 barrels daily from this formation when brought in over a month ago and recently has been maintaining steady production of 1400 barrels. Location of Bechtel 1 is NE SE NW Section 33-3n-8e.

Pure Oil Company's E. C. Brach 1, NW NW SW Section 26-1n-7e, Bedford Township, Wayne County, being cleaned out following a shot, is expected to yield 100 barrels a day under pump. The company has moved the rotary rig from the Bechtel site to the Albert Travis farm, where a northern offset to the Bechtel well will be drilled.

In Marion County, test of Dee, Carter et al on the "junk yard" location in the village of Patoka, hit oil-bearing Benoist sand at 1393 feet. Production is estimated from 100 to 500 barrels a day.

Causes Drilling Rush

Wiser Oil Company announced a location slightly northeast of the Travis well on the 840-acre Damon Smith farm which it has under lease. A 120-foot derrick is being erected and drilling equipment is on the way. Wickland Oil Company will rig up shortly at its location on the John Brissenden farm, northwest of the Travis well. Operators holding leases in this territory, who have been rushing drilling operations since the Travis strike, were spurred to greater activity by the showing made at the Bechtel well this week.

Benedum-Trees Oil Company will drill a test on 2800 acres held by the Flora chamber of commerce south of that city, in Clay County.

Two operators in Ohio fields obtained 125-barrel producers by treating wells completed weeks previously. E. H. Everett Company, which completed Ella Gill 5, Licking Township, Muskingum County, two weeks ago, boosted production from 10 to 125 barrels with a shot. A similar operation brought like production at Preston Oil Company's test on the Lloyd Bailey tract, Section 22, Union Township, Knox County, which had initial production of 10 barrels a day when completed several weeks ago.

Twenty-seven completions were recorded in Ohio fields, of which six were producers, 13 were gas wells and eight failures. Most outstanding was the gas well of the Hopewell Oil & Gas Company on the S. A. Bowman lease, Section 32, Wayne Township, Muskingum County, which was bottomed at 4204 feet. It gauged 4,600,000 feet naturally from Clinton sand at 4154-96 feet, making it the largest gas well completed in Ohio in some time.

Record Oriskany Gas Yield

Records in the Oriskany gas field of Kanawha County, West Virginia, were broken with Godfrey L. Cabot, Incorporated's test on the J. E. and M. D. Good farm, Poca district, which gauged in excess of 20,000,000 feet a day, a new record for initial gas volume in this area. It is of great importance in that it extends the field two miles west. The well topped Corniferous lime at 4705 feet, the Oriskany at 4808 feet, and found gas at 4813 feet.

United Carbon Company completed another good well in the Oriskany field on the J. A. Moss et al farm, also in Poca district. Bottomed at 4850 feet, it showed an initial gauge of 11,700,000 cubic feet a day and topped the Corniferous lime at 4724 feet.

Outside of the Oriskany field, largest West Virginia gasser for the week was that of Massey & Jarvis Drilling Company on the J. R. Lynch farm, Glenville district, Gilmer County, bottomed at

EDWARD FORGED STEEL GAGE VALVES

Straight and Angle

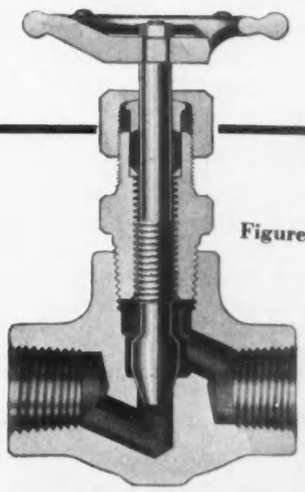

Figure 152

These valves, designed especially for gage, meter, and other small pipe lines, are drop forged from laboratory controlled carbon steel. The stem is of stainless steel. Valve can be repacked under pressure. 4000-lb. OWG working pressure. Sizes: ⅛" to 1".

MAINTENANCE ENGINEERING CORPORATION

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1535 feet and gauging 2,500,000 cubic feet a day from Keener sand.

Deep Test For West Kentucky

South Penn Oil Company has awarded a contract for a deep test in McLean County, 32 miles west of Owensboro in western Kentucky, to the Lawrence Drilling Company.

EASTERN FIELDS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
OHIO		
ASHLAND COUNTY—		
Ohio Fuel Gas Co., Ralph Fishpaw 1	¶	2570
ASHTABULA COUNTY—		
C. A. Millen, Tibbitts Walker 5....	*	1680
ATHENS COUNTY—		
Chartiers Oil Co., E. Stratton 3....	18	3526
C. W. Nuzum, Perry Judson 1.....	*	1546
GUERNSEY COUNTY—		
Geo. Jewell & Co., Joseph Harper 1	¶	1175
HURON COUNTY—		
A. C. Leathers & Co., E. H. Tobey 1	¶	330
JEFFERSON COUNTY—		
O'Day Oil Co., Mrs. E. P. McConnell 11	10	1278
KNOX COUNTY—		
Preston Oil Co., Wm. Miser 1....	*	3040
LAWRENCE COUNTY—		
Petri & Newman, C. Hunt 1.....	¶	2812
LICKING COUNTY—		
Wehrle Gas Co., Wm. Wright 1....	¶	2335
Frank Woolard 1	¶	1365
LORAIN COUNTY—		
William Dempsey, Joseph Miller 1	¶¼	2327
MEIGS COUNTY—		
J. I. Clark & Co., Herbert Tucker 1	¶¼	1873
A. T. Barton, Isaac Taylor 5.....	¶	675
MONROE COUNTY—		
Whitten Creek Oil & Gas Co., Arthur Hupp 7	3	1497
John Lumbatis et al, George Fogle 1	¶1	965
Bert Robinson & Co., Mary Crum 2	¶	1300
MORGAN COUNTY—		
Turney & Co., N. Hardin 9.....	2	389
MUSKINGUM COUNTY—		
Hopewell Oil & Gas Co., S. A. Bowman 1	¶4½	4204
NOBLE COUNTY—		
Metcalf & Co., G. Masters 10.....	*	965
PUTNAM COUNTY—		
Brown & Co., Federal Land Bank 3	24	1340
WASHINGTON COUNTY—		
Schneider Oil Co., Wm. Covey 10..	3	1162
Dreamer Oil & Gas Co., Jasper Dermott et al 2	¶	1328
Charles Vaughn, Ada Vaughn 9...	*	725
J. L. Swingle, Mary Greene 1.....	*	1050
WOOD COUNTY—		
Johnson & Co., J. Luman 1.....	*	1485
WEST VIRGINIA		
BOONE COUNTY—		
Pawnee Corp., T. L. Brown 1.....	*	2534
CABEL COUNTY—		
Merrits Creek Gas Co., Huntington Orchards 2	¶	3245
CALHOUN COUNTY—		
Hope Natural Gas, McIntyre & Rafferty 3680	5	1940
Ferrell & Bush, L. B. Corroll 2...	¶	2340
GILMER COUNTY—		
Massey & Jarvis Drilling Co., J. R. Lynch 1	¶2½	1535
Kenneth F. Ermlich, J. A. Jeffries 1	¶	1715
KANAWHA COUNTY—		
Godfrey L. Cabot, J. E. & M. D. Good	¶20	4817
United Carbon Co., J. A. Moss et al	¶11¾	4850
United Fuel Gas Co., Sandy Creek Coal & Land Co. 4095	¶	2530
LINCOLN COUNTY—		
W. C. Kingery et al, Lincoln County Poor Farm 4	¶	3785
PLEASANTS COUNTY—		
Feeney Oil & Gas, C. B. Martin 1..	1	1660
F. M. Clymer & Co., Allen Howell 1	*	800
F. R. Ferguson et al, Oliver Gorrell 2	*	1870
PUTNAM COUNTY—		
Smith & Young, Thomas Gibson Heirs 1	¶	1020
Smith Oil & Gas Co., Simms Heirs 1	*	1053
RITCHIE COUNTY—		
West Virginia Investment Co., Joseph Parks 20	10	2080
Clem Morris, A. D. Miller 1.....	¶	2075
Diamond Supply Co., Harrison Wright 1	*	2410
ROANE COUNTY—		
W. B. Heeter, W. B. Heeter et al 2	2	1735
Egypt Oil & Gas Co., J. T. Morford 1	¶	2025
WAYNE COUNTY—		
West Virginia Gas Corp., Emaline Bowden 1	¶	3325
KENTUCKY		
DAVIESS COUNTY—		
South Penn Oil Co., E. C. Ward 5	10	695
HANCOCK COUNTY—		
Miller Bros., G. M. Roby 7.....	5	475
Egg Oil Co., C. W. Smith 3.....	¶¾	442
Frank Damron et al, Ollie Lyons 1	¶	484
JOHNSON COUNTY—		
Evans Gas Co., Sandy River Coal Co.	*	3020
KNOTT COUNTY—		
Warfield Gas Co., J. W. Duke 1...	¶	2942
S. D. Maggart 1	¶	2825
LEE COUNTY—		
Evans Oil & Gas Co., J. F. Raines 12	50	....
Price Fraley et al, Andrew Combs 3	25	995
H. D. Parrish, Jr., et al, Pryse & Gourley 1	*	....
McLEAN COUNTY—		
W. E. Hupp et al, John A. Given 1	60	1136
John A. Given 2	75	1114
J. C. Miller et al, Austin & Cullen 6	40	1124
The Petroleum Co., Bettie Cullen 7	40	1134
OHIO COUNTY—		
J. C. Ellis, J. T. Hogland 15.....	60	461
Fred J. Young et al, Oscar Whitehouse	40	....
Evans et al, Cameron Heirs 7	20	543
Cumberland Petroleum Co., S. L. Lloyd 17	*	....
Henry Scholl, Babbitt Heirs 1	*	540
PIKE COUNTY—		
United Carbon Co., Island Creek 25.	¶1½	1610
POWELL COUNTY—		
Wireman Bros., Albert Stewart 3..	*	....
PENNSYLVANIA		
GREENE COUNTY—		
Greensboro Gas Co., Barclay 1....	¶1	1310
WASHINGTON COUNTY—		
South Penn Oil Co., J. Q. Zimmerman 4	25	3024
Keystone Gas Co., J. H. Hixon 1..	¶	1277
ILLINOIS		
MARION COUNTY—		
Hempen & Burgess, Jeff Smith 1..	40	1447
WABASH COUNTY—		
Adams Corner Oil Co., Mark Madden 1	50	....
INDIANA		
VIGO COUNTY—		
Hoffmeister, Ring et al, Earl French 1	*	1425
Keller Development Co., Ben Beard 1	*	1900

*Failures; †Junked; ¶Million cu. ft. gas.

MICHIGAN
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARENAC COUNTY—		
Great West Pet.'s Keef 2, se s sw 3-20n-4e	400	2690
Hal Be Oyle's Peavy 1, sw sw se 4-20n-4e	110	2682
GLADWIN COUNTY—		
E. S. Beaver's Thompson 2, ne nw nw 13-18n-1w	1200	3650
Upton 3, se se nw 36-18n-1w.....	500	3570
Petroleum Investor's Thompson 1, nw ne nw 13-18n-1w	960	3630
Shine & Merchant's Johnson 1, ne se ne 15-18n-1w	160	3652
Bell & Mark's Lincoln 2, se ne se 35-18n-1w	500	3585
A. M. Henry's Lincoln 2, nw se se 35-18n-1w	750	3586
Gordon Oil Co.'s Havens A4, sw sw nw 36-18n-1w	1300	3598
State A1, sw sw ne 36-18n-1w	950	3591
MIDLAND COUNTY—		
Pure Oil Co.'s Corning D2, s½ nw ne 11-13n-2w	*	3461
Rayner D5, s½ se ne 11-13n-2w..	55	3444
H. C. Nelson's State 6, sw nw sw 31-22n-3e	70	2604

*Failures; †Junked; ¶Million cu. ft. gas.

MICHIGAN FIELDS

Western prospects continue on upward trend

* * *

Line planned to relieve congestion at Buckeye

Mt. Pleasant, Mich.—West Michigan prospects continued on the up trend this week as Flannigan & Kehlet trustee's Clair 1, SW NE SE Section 29 Trowbridge township, Allegan County, showed possible commercial Traverse lime oil at 1356 feet. Operators were testing and attempting to determine water source cutting oil which was swabbed.

The Trowbridge wildcat is 18 miles south of the Salem township development where shallow Traverse lime production was opened this spring between 1500 and 1700 feet. Acid has made potentials up to 1500 barrels daily on three tests completed in this section.

150 Barrels Per Well

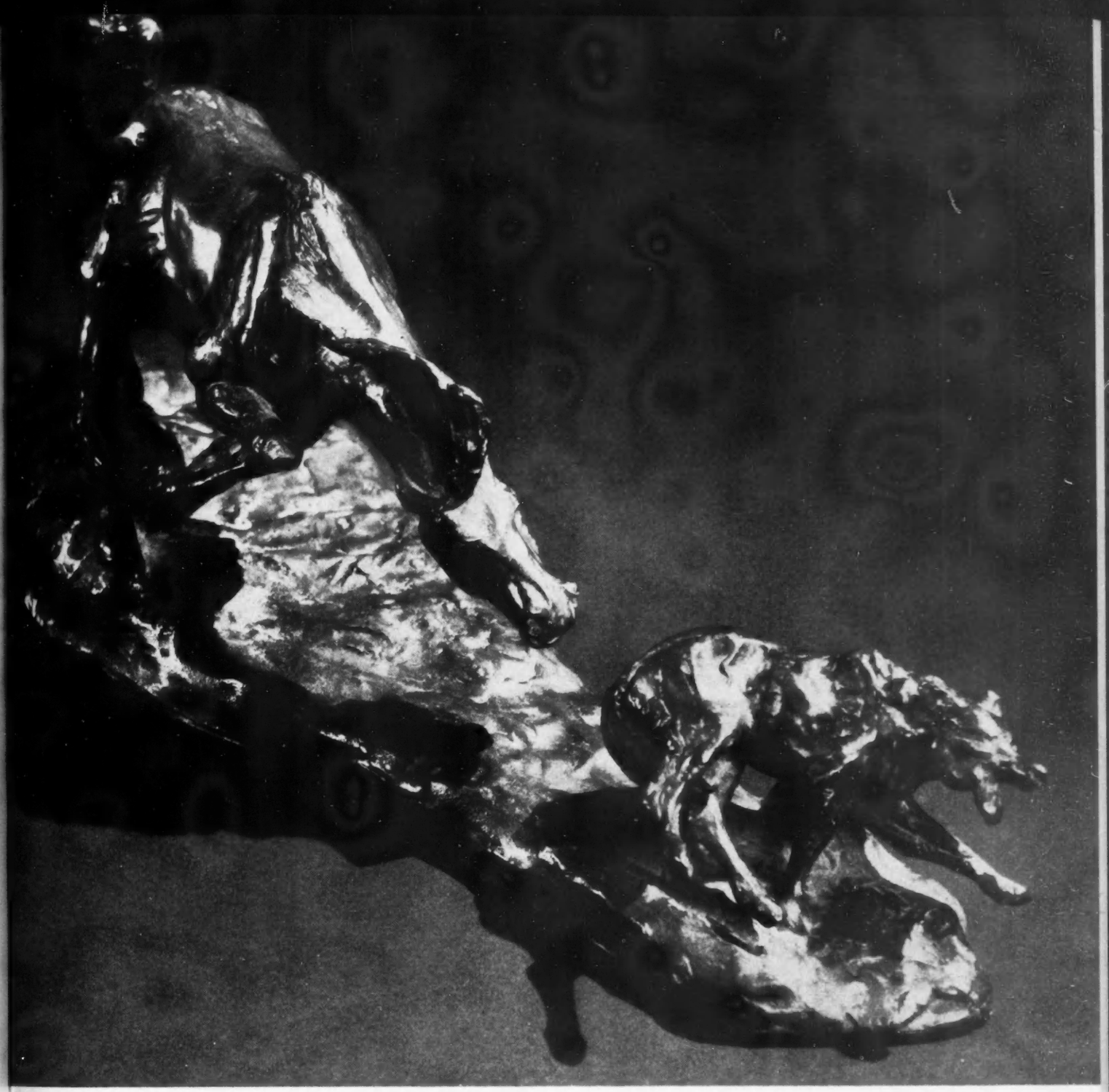
Buckeye field, Gladwin County, has been placed on a 150-barrel-per-well flat allowable by the Producers Committee, eliminating the previous plan of a base and percentage take. Runs from the field, which the committee credits with an 80,000-barrel daily potential, are now averaging under 18,000 barrels daily. Work is continuing active despite the prorate and completions during the week were expected to add around 10,000 barrels more to the potential in the field.

McClanahan Pipe Line Company and Leonard Group this week announced incorporation of Leonard-McClanahan Pipe Line Company which will immediately enter the Buckeye area and give from 2000 to 4000 barrels additional outlet in the crowded field.

To Lay 40-Mile Line

Original plans to immediately lay a 40-mile 6-inch line from the field into Alma and St. Louis, location of the McClanahan and Leonard refineries, has been shelved. Instead, a contract has been closed with Pure Transportation Company for the latter to move Leonard-McClanahan oil out orf Buckeye to Greendale tank farm, through the company's new 6-inch. Leonard-McClanahan to complete the set up has started laying 6 miles of new 6-inch from the farm south to tie in at Yost booster with the old McClanahan Yost-to-Alma double 4-inch lines. Leonard-McClanahan also announced purchase of the old Mid-West Pipe Line 4-inch out of Alma to Crystal field.

D. E. Beach, former superintendent of Michigan operations of Pure Transportation Company, is new general superintendent of the Leonard-McClanahan system. Joe Miller, now in the Pennsylvania district for Pure Oil Company will succeed Beach as superintendent of the Michigan division.



†"The Range Father"—by Charles M. Russell

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☆ ☆ ☆

†*Charles M. Russell had the rare ability to leave an accurate and artistic record of the life of animals. In this bronze, a stallion is protecting the mares and colts from wolves or coyotes. These proud fathers were always on the lookout, and wolves were not allowed to get near the herd.* ☆ *This is the first time that permission has been granted for the reproduction of this bronze. A reproduction of this picture, suitable for framing, is available upon request.*

AXELSON PUMPS AND SUCKER RODS

CALIFORNIA FIELDS

Well west of Santa Maria is attracting attention.

* * *

Kettleman North Dome outpost cores good oil sand.

* * *

Joint tests on wildcat blocks becoming popular.

Los Angeles.—The Santa Maria Valley, where good wells recently have been drilled to the east of the old Santa Maria field, is attracting considerable attention, due to the producing of considerable oil by a new Union Oil Company test west of the old field. Whether both areas will be embraced in one new field, or if they will make up two fields, is unknown.

For the past week, attention has been centered on Union Oil Company's Russell 1, Section 21-10-34, with bottom at 4579 feet, which at first refused to flow. When tubing was being pulled preparatory to placing pumping equipment, the well made a nice flow of 15.9 gravity oil, cutting slightly better than 10 percent. The well later flowed by heads, but it is practically certain it will have to be pumped, at least until the formation is opened sufficiently to flow. When closed in, the well built up a fair pressure.

Four New Tests Expected

It is understood Union plans to start two holes in the new area, and others holding nearby leases are expected to start at least two immediately and probably more in the next few weeks. This play in the Santa Maria Valley has been receiving prominent attention for several weeks and leasing has been active in practically every direction from the first wells drilled. The east side, generally called the Adam area, is served by a new pipe line built by Union Oil Company, and gathering lines have been placed. The first producers had to be shut in due to lack of pipe line facilities.

North Dome Outpost Running High

The deep test being drilled by Kettleman North Dome Association on the outer edge of the North Dome of Kettleman Hills picked up three feet of oil sand at 10,713 to 10,716 feet. The test, 4-18J, is located 330 feet north and 330 feet east from the west quarter corner of Section 18-21-17. The cores continued to show streaks of oil sand, showing good cuts, with bottom at last reports at 10,741 feet. The oil sand is classified as Eocene-Avenal sandstone and corresponds to that cored in the Lillis-Welch 1 at 10,821 feet. The new test is running about 200 feet higher than the Lillis-Welch. In this test, top of the Temblor was picked up at 7822 feet. Last string of pipe, 9⅝-inch, was cemented at 8387 feet, giving the test 2354 feet of open hole.

Deep Ones In Trouble

Most of the other real deep tests in California are having trouble, especially those below 10,000 feet. Several holes drilling below 9000 feet are coring ahead slowly. Arkelo Petroleum Company's No. 41, near Lerdo in Kern County, bottom at 10,056 feet. is fishing for drill pipe, with a good chance for total recovery. Superior Oil Company and Union Oil Company's joint test K.C.L. 8, Section 11-30-26, in Ten Section area of Kern County, with bottom at 12,618 feet, continues to perforate and test the upper zones. This test stuck the drill pipe. It is extremely doubtful if any attempt will be made by operators to side track or fish for drill pipe in an effort to make more hole. "Bugs" from this hole at extreme depths were studied very carefully for information which may be of special value in time to come.

Union Oil Company's Callender 50 in the old Dominguez field, bottom at 10,435 feet, has been cleaned out to 10,430 feet, and a plug has been set at 9573 feet. A string of 6⅝-inch casing was cemented at 10,050 feet, and every effort is to be made to make the hole produce. In this same field, Shell Oil Company's Reyes 90, with bottom at 9598 feet, has cemented 8⅝-inch casing at 6780 feet, and is waiting for cement to set. The last previous pipe in this hole was 11¾-inch at 3920 feet. Drill pipe had been lost, delaying operations, but was successfully recovered. Many of the deeper Dominguez wells have

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See 1937 COMPOSITE CATALOG (page 1334)

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CALIFORNIA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BELRIDGE—		
Belridge Oil Co., No. 35-24	2230	8690
FRUITVALE—		
V. G. R. Wilbur, Fruitvale 1	100	3893
KERN FRONT—		
Barnhart-Morrow Cons., K.C.L. 4	125	1978
Dougan Oil Co., Newhouse 2	150	2928
LOST HILLS—		
Texas Co., Theta 11-9	390	2048
MOUNT POSO—		
Shell Oil Co., Security 19	420	1678
MIDWAY SUNSET—		
Pattiway Oil Corp., No. 2	70	1585
Quality Oil Co., W. P. 2	300	2186
Standard, No. 47-33D	500	3060
ROUND MOUNTAIN—		
Shell Oil Co., Freeman 14	850	1971
Round Mountain Oil Co., Jewett 2	*	1900
SHIELLS CANYON—		
Texas Co., Shiells 132	200	4137
KERN COUNTY—		
Elk Hills Pet. Co., Elk Hills 1	*	7580
Wilshire Oil Co., F&P 1	*	5937
SAN BENITO COUNTY—		
Tide Water Associated, Murphy Ranch 1	*	6921
EL SEGUNDO—		
Republic Pet. Co., El Segundo 8	150	7406
Texas Co., Security 2	300	7263
Johnson 2-2	*	7750
HUNTINGTON BEACH—		
Union Oil Co., Copeland 9	40	4138
LONG BEACH—		
A. T. Jergins, Municipal 29	250	3005
RICHFIELD—		
Arrowhead Oil Co., Bradford 1	50	3436
Union Oil Co., Coyle 9	100	3402
TORRANCE—		
Weber-Butler Oil Co., No. 2	50	4528
WILMINGTON—		
F. C. Hall, No. 484-1	320	3324
Olympic Refining Co., Fee 2	150	3411
Pacific Western, Pet. Sec. 1	200	3460
Royalty Service Corp., Nelson B-1	225	3315
Santa Fe B-1	670	3604
Union Pacific Ry. Co., Offset 13	1000	3904
Offset 30	450	3145
EAST COYOTE—		
Bandini Pet. Co., Bowen 1	*	4083
MIDWAY SUNSET—		
Oil Producers, No. 2	*	2909
No. 2A	*	2710

*Failures; †Junked; ¶Million cu. ft. gas.

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penetrated seven known zones, and most recent deep holes have picked up the eighth producing zone.

May Cause More Drilling

Union Oil Company is making slow progress in recovering drill pipe from Bell 100 in the old Santa Fe Springs field in Los Angeles Basin. Bottom is at 10,789 feet. Top of stuck drill pipe is at 7443 feet. Only two wells are drilling at Santa Fe Springs, but other deep tests may be started if Union succeeds in making a producer out of Bell 100.

There is a possibility that two wildcats in Kern County will be carried down to extreme depths. Ohio Oil Company's Title Insurance & Trust 1, Grapevine area, Section 21-11-19, is drilling and coring at 9175 feet in brown shale. Last casing was 6⅝-inch, cemented at 6637 feet. This well is equipped with one of the heaviest rigs in the state. Also in the Wasco area of Kern County, Seaboard Oil Corporation and Tide Water Associated's joint test, K.C.L. C1, in Section 26-27-24, has reached 9565 feet in brown shale and is drilling and coring ahead. Last casing was 7-inch cemented at 9148 feet.

Large Belridge Well

Completion of a well making better than 2000 barrels of 32 gravity clean oil, plus 5,000,000 cubic feet of gas, by Belridge Oil Company in the deep zone at Belridge has attracted attention to this deep field, where acreage is held by a few companies. The late completion was No. 35-24, in Section 35-27-20, with bottom at 8690 feet. Nine-inch casing had been cemented at 8159 feet, and 840 feet of 4¾-inch, including 382 feet of perforated, was landed at 8690 feet. A string of 2½-inch tubing was run to 7330 feet. The well came in making 2230 barrels of clean 32 gravity oil and was then beaned back to 850 barrels, flowing through a 7/64-inch choke. At the latter rate it was making 2,300,000 cubic feet of gas.

Belridge Oil Company is drilling two wells in Belridge and is preparing to start two new holes. Continental Oil Company, The Texas Company and Tide Water Associated Oil Company are drilling one well each, and Ohio Oil Company has announced location for a new well on the Emily Hopkins lease in Section 4-29-21.

To Drill 7000-Acre Block

Joint tests are becoming rather popular in California, especially where they are being made to test large tracts of wildcat acreage. The latest joint test to be announced is that of the Amalgamated Oil & Gas Company and Formax Oil Company, the two concerns having about 7000 acres under lease. The new hole will be drilled in the southwest quarter of Section 29-24s-24e, in the Trico area of Tulare County. The site for the test was chosen after about two years of seismograph work and present plans call for a hole 8000 feet deep. Several wildcats have been drilled in past years in this general area. Substantial acreage is held there by General Petroleum, Honolulu Consolidated Oil Company, Standard Oil Company of California, Superior Oil Company, The Texas Company, and Union Oil Company. Roads are being built to the location.

McGunden Wildcat In Sand

Another joint test is that of Superior Oil Company and Jengins Trust, where Crome Community 2, Section 36-29-28, in the McGunden area of Kern County, is in oil sand with bottom at 2775 feet.

Western Gulf Oil Company is preparing to drill another wildcat in the Cantua Creek area of Fresno County where it holds rather extensive acreage and where a previous test showed some oil, but was abandoned. Skelley Estate 1 will be drilled 440 feet north and 440 feet west from the southeast corner of section 32-16s-15e.

Still another joint test, this time in Los Angeles Basin, is to be drilled by Amalgamated Oil & Gas Company and an independent refiner, in the Olinda area of Orange County. The project, located in the northwest corner of the northwest quarter of Block 10, Yorba Linda tract, will be a Miocene test for an extension of the old Olinda field. Geological examination of the area indicates a monocline against a fault. Companies holding extensive leases in this area include Hancock Oil Company, Shell Oil Company and Universal Consolidated Oil Company.

Rather an interesting test is Midwestern Oil Company's L-1, easterly edge well in the old Mesa field in Santa Barbara County, with bottom at 2054 feet, which on production test flows by heads gas, mud, water and a little oil.

Specially Designed for Oil Service

IN OIL AND GAS FIELDS, refineries, pump houses, and on oil pipe line systems, Kennedy 400-lb., 700-lb., 1000-lb., 1600-lb. and 2500-lb. test Gate Valves have a wide application.

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Other Kennedy products for the oil industry include standard, extra heavy and extreme pressure globe, angle and gate valves, malleable iron screwed fittings and cast iron flanged fittings. These products are fully described and listed in the Kennedy Catalog which will be sent on request.

The Kennedy Valve Mfg. Co., Elmira, N. Y.

KENNEDY

VALVES-PIPE FITTINGS-FIRE HYDRANTS

Taft planning West Coast oil exposition

Taft, Calif.—The first major exposition of the oil industry held on the Pacific Coast in several years is planned at Taft this fall. After two years of preliminary work by committees from the Taft Chamber of Commerce a corporation was formed to handle the Pacific Oil Show and Black Gold Festival, scheduled to be held from September 16 to 19 inclusive.

There will be four days of exhibitions of all equipment and services used in drilling, producing, refining and marketing petroleum products. In addition to draw the crowds for the exhibitors the Black Gold Festival part of the show will be a celebration of the industry replete with carnival spirit and entertainment.

The organization handling the show is composed of pioneer oil men of the community and civic leaders. The Kern County Chamber of Commerce and the County Board of Supervisors furnished the money necessary for the preliminary work. The San Joaquin Valley oil men at a meeting held in Bakersfield endorsed the show, and the Taft City Council in endorsing the project invited the entire industry to participate.

Engineers are busy now planning the exposition grounds and buildings at Franklin Field, a county community center which has been furnished to the show for use. More than 87,000 square feet of exhibit space will be available.

IMPORTANT WILDCAT TESTS

ARKANSAS

ASHLEY COUNTY—Joe Modisett & Phillips Pet. Co.'s Stillions 1, s½ sw nw 18-17-9, rog.

CLEVELAND COUNTY—Texas Canadian Dev. Co.'s I. E. Moore Est. 1, ne ne 22-9-10, cor 2310 ft.

COLUMBIA COUNTY—Robert Keen's Runyon 1, 1-16-21, dk.

CRITTENDEN COUNTY — Stanley Oil Corp., Nanner 1, 18-8-9, new lcn.

DALLAS COUNTY—J. C. Voyles et al's Sorrells 1, se se sw 35-10-16, dr 1680 ft.

HEMPSTEAD COUNTY—Easton, May & Murdock's LaGrone 1, ne ne 5-12-26, woc 12½ in csg 131 ft. E. H. Moore, Inc.'s Porterfield 1, ne se 21-14-25, elev 346 ft, chalk 1275-1650 ft, top anhydrite 3128 ft, abd below 4150 ft.

HOWARD COUNTY—Boetcher O&G Co.'s State Life 1, nw nw 28-11-27, spudded.

LAFAYETTE COUNTY—Nivla Oil Corp.'s DeLay 1, nw sw se 19-15-24, dr below 3710 ft.

LINCOLN COUNTY—Fitzwater et al's V. Bowens 1, nw sw ne 26-9-6, woc 10 in csg 20 ft.

LITTLE RIVER COUNTY—J. G. Strahan's Dierks 1, 21-12-28, top red beds 1130 ft, top anhydrite 1804 ft, so 2349-54 ft, junked abandoned 2354 ft td.

LONOKE COUNTY—Frank Silver's Chambers 2, 17-2-7, sd 1025 ft.

MILLER COUNTY—W. L. McClanahan et al's Capps 1, ne sw 11-20-28, elev 284 ft, chalk 2040-2552 ft, top first anhydrite 5270 ft, so in core 6074-92 ft, set 7 in csg 6016 ft, td 6113 ft (corrected) swabbing, so. E. H. Moore, Inc.'s Dale 2, 24-15-26, elev 250 ft, top Young 4320 ft, top Travis Peak 4654 ft, cemented 8⅝ in csg 5655 ft, fishing 6079 ft. Standard of La.'s Harvey 1, sw sw 33-16-25, dr 4860 ft.

NEVADA COUNTY—Benedum & Trees Oil Co.'s Groves 1, se nw 10-14-20, top big lime 5144 ft, cored porous lime saturated with sw 5144-55 ft, base big lime 5394 ft, top salt 5510 ft, td 6147 ft, plugging back and per at 2186 ft.

OUACHITA COUNTY — Copenhaver Oil Corp.'s Evans 1, ne sw 20-11-19, 10 in 60 ft, woc. H. H. Taylor's McCree 1, sd 2936 ft. I. D. Reynolds' Ft. Smith Lbr. Co. 1, 27-11-17, spd.

UNION COUNTY—Alice Sidney Oil Co.'s Powledge, sw se 7-18-17, dr below 3910 ft. Jones et al's Murphy A1, ne ne 19-18-17, dr 1975 ft; Murphy B-1, se ne 13-18-18, dk. W. D. Wingfield's Southern Kraft 1, 18-16-14, dr.

CALIFORNIA

FRESNO COUNTY

CANTUA CREEK—Western Gulf Oil Co.'s Skelley Estate 1, 32-16-15, lcn.

KERN COUNTY

DEVIL'S DEN—Amerada Pet. Corp.'s Beer 4, 17-26-19, td 2670 ft, in sand and shale, ran formatio ntester, 1800 ft, recovered gas cut mud, brackish water. Den Pet. Co.'s Bates 1, 20-25-19, td 4276 ft, recovered fish, to cement 9-inch at 3500 ft. Geo. Goodrum's Baron 1, 24-25-18, sd 320 ft.

LERDO—Arkelo Pet. Co.'s No. 41, 23-28-26, td 10,056 ft, fsh.

CARRISA PLAINS—Anchor Oil Co.'s No. 1, 31-31-22, grading roads. Eocene Oil Co.'s No. 1, 31-31-22, rig.

BENA—Bacal Oil Corp.'s No. 1, 5-30-30, dr gray sand 1790 ft. Cajalco Pet. Co.'s Brown-Pallette 1, 9-30-30, dr sand and shale 3200 ft.

ROUND MOUNTAIN—Calif. Western Oil Co.'s Durnal 1, 4-28-29, rig. Patton-Baldwin Oil Co.'s No. 1, 32-28-29, td 2080 ft, hit grit zone 2066 ft, formation tester recovered water. J. J. Tavis' No. 1, 4-29-29, rig.

KERN FRONT—C. C. M. Oil Co.'s Carter 1, 7-27-27, dr blue shale 3242 ft. Seskayden Oil Co.'s No. A-3, 17-28-27, td 2890 ft, co.

WASCO—Continental Oil Co.'s K.C.L. A-2, 8-27-24, rur. Seaboard Oil Tide Water Associated's K.C.L. C-1, 26-27-24, dr brown shale 9564 ft.

JASMINE—Doyle Pet. Corp.'s Quinn 1, 15-25-27, td 2956 ft, plug 2882 ft, sd.

EDISON—East Edison Oil Co.'s No. 1, 23-30-30, sd 1380 ft. Golden Bear Oil Co.'s Cohn 1, 12-30-29, dr shale 1091 ft, tar sand at 1085 ft.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

*—*dry hole abandoned well.*	owdd—*old well drilling deeper*
‡—*salt water (completions).*	owpb—*old well plugging back.*
†—*junked and abandoned.*	pb—*plugged back or plugging back.*
¶—*million feet of gas.*	r—*reaming.*
abd—*abandoned.*	rog—*rig on the ground.*
bbls—*barrels.*	rur—*rigging up rotary tools.*
br—*building rig.*	rust—*rigging up standard tools.*
b.s.—*basic sediment.*	sd—*shut down.*
csg—*casing.*	sdtr—*sidetracking.*
co—*cleaning out.*	sg—*show gas.*
dd—*drilling deeper.*	si—*shut in.*
dk—*derrick.*	so—*show oil.*
dr—*drilling.*	so&g—*show oil and gas.*
fsg—*fishing.*	spd—*spudding.*
ft—*feet.*	sr—*straight reaming.*
hfw—*hole full of water.*	sw—*salt water.*
in—*inches.*	td—*total depth.*
lcn—*location.*	ur—*underreaming.*
m—*milling.*	wih—*water in the hole.*
mim—*moving in materials.*	wo—*workover.*
mit—*moving in tools.*	wocs—*waiting on cement to set.*
mot—*milling on tools.*	wosr—*waiting on standard rig*
n, s, e, w—*north, south, east, west.*	
oih—*oil in hole.*	

ROSEDALE—Continental Oil Co.'s K.C.L. B-1, 12-29-26, dr gray sand 9374 ft.

ELK HILLS—Elk Hills Pet. Co.'s No. 1, 14-31-28, td 7580 ft, plug 300 ft, abn.

GRAPEVINE—Hall-Baker Co.'s No. 11-1, 14-10-19, dr shale 2174 ft. Ohio Oil Co.'s Title Ins. D1, 21-11-19, dr brown shale 9173 ft. Reserve Oil & Gas Co.'s No. 33-4, 33-11-19, td 4595 ft, deepening co to 4550 ft, formation tester recovered water.

NORTH KERN RIVER—Hub Oil Co.'s No. 1, 8-28-28, sd 3320 ft.

KERN RIVER—Italo Pet. Corp.'s No. 1, 19-28-28, rur. Ray Luse's McNeil 1, 10-28-28, spud 6/14.

SAN EMIDIO—Kern Leasing Co.'s No. 2, 14-10-23, dr shale 220 ft. Union Oil Co.'s Morrison 1, 31-11-22, spud 6/11, dr.

STRAND—Ohio Oil Co.'s K.C.L. E-2, 6-30-26, dr shale gray sand 8295 ft.

TEN SECTION—Shell Oil Co.'s Canal 21-14, 14-30-25, dr shale 8612 ft. Superior Oil-Union Oil Co.'s K.C.L. 8, 11-30-26, td 12,618 ft, testing upper zone, no results.

FRUITVALE—Shell Oil Co.'s Bellevue A-36-31, 31-29-27, dr shale 4368 ft.

WEST MOUNTAIN VIEW — Sunset Oil Co.'s Sunset-Starr 1, 17-30-28, sd 6794 ft.

SOUTH MARIPOSA — Trans-Line Pet. Corp.'s No. 1, 3-10-23, sd 662 ft.

MOUNTAIN VIEW—Union Oil Co.'s Barubeltz 1, 1-30-28, lcn.

McGUNDEN — Superior Oil-Jergin Trust's Crome Com. 2, 36-29-28, shale and oil sand, wocs 8⅝ in at 2750 ft.

RIO BRAVO—Union Oil Co.'s Kernco 1-34, 34-28-25, dr brown shale 9044 ft.

MIDWAY-SUNSET—Valley Oil Co.'s No. 1, 18-32-23, td 3170 ft, plug 2780 ft, sd.

BAKERSFIELD—Wilshire Oil Co.'s F&P 1, 36-29-27, topped Santa Margarita 5150 ft, td 5937 ft, abn.

MISCELLANEOUS

HUMBOLDT COUNTY—Texas Co.'s Eureka 2, 22-3-1, td 7708 ft, co to 7401 ft, hole caving.

KINGS COUNTY—Birch-Royer Oil Co.'s Wm. Orr 1, 5-23-17, td 500 ft, to set 13⅜ in at 450 ft. Ray Bisconer's No. 1, 11-24-20, lcn. Central Calif. Utilities' No. 1, 11-23-19, td 1202 ft, plug 1190 ft, sd. Dudley Kettleman Oil Corp.'s No. 2, 11-24-20, td 1050 ft, in sand. Dudley Ridge Dev. Co.'s No. 2, 24-23-20, dr shale 400 ft. Kettleman View Oil & Gas Co.'s No. 1, 9-22-19, td 4787 ft, perforated 4300 to 4400 ft, co. Glen C. Stone's Teeter 1, 25-20-20, dr sandy shale 1240 ft. Tri-Counties Oil Co.'s Olson 1, 10-23-22, sd 4300 ft.

MADERA COUNTY—Tide Water Associated's Gill 1, 27-12-15, lcn.

SAN BENITO COUNTY—Tide Water Associated's Murphy Ranch 1, 5-12-4, near Sargent, td 6921 ft, perforated 3795 to 3905 ft, flowed water, plugged, abn.

SAN JOAQUIN COUNTY — Standard's Woods Com. 1, 24-1-5, td 5310 ft in gray sand, to run formation tester. Texas Co.'s Lawrence-Stephens 1, 8-1-6, spud 6/3, dr, set 13⅜ in at 590 ft.

SOLANO COUNTY — Amerada Pet. Co.'s Marks 1, 24-4-2, td 4450 ft, gas well, shut in; Marks 2, gas well, shut in; Triguerio 1, 24-4-2, dr shale 610 ft.

STANISLAUS COUNTY — Coast Explor. Co.'s No. K-2-1, 30-4-9, td 4425 ft, formation tester recovered mud and water.

SUTTER COUNTY—Buttes Oilfields' No. 4, td 5800 ft, fsh.

TULARE COUNTY—E. P. Jennings' No. 1,

Williams Brothers Corp.

General Contractors

Oil · Gas · Gasoline · Water · Pipe Lines

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4-24-23, sd 2707 ft; No. 2, 33-23-23, rig. Standard's Morris 1, 36-24-23, lcn.

YOLO COUNTY—Standard's E. E. Hooper 1, 32-9-1, foundation.

MONTEREY COUNTY—Amil A. Anderson's No. 1, 15-24-14, td 1095 ft, r. Shell Oil Co.'s Branch 1, 34-24-10, td 8994 ft, plug 8698 ft, wet, to replug; Branch 2, td 8662 ft, plug 8045 ft, sd.

SAN LUIS OBISPO COUNTY—Burkholder Oil Corp.'s Clay 1, 14-10-26, sd 3252 ft. R. A. Foster's McKee 1, 2-32-23, td 5087 ft, to plug and test. A. O. Lewis' Pecho 1, 34-30-10, td 2750 ft, to set casing. Temblor Oil Co.'s No. 1, 22-31-21, td 1715 ft, wocs 8⅝ in at 1701 ft. Oscar Willett's No. 1, 27-26-13, dr water well.

SANTA BARBARA COUNTY—E. C. Arnold's Arnold-Apache 2, 8-8-33, td 4760 ft, r. Hancock Oil Co.'s Los Alamos 2, 6-7-32, dr shale 2206 ft. Leora Oil Co.'s Fithian 1, 8-4-25, sd 1025 ft. Midwestern Oil Co.'s Midwest L-1, 28-4-27, td 2054 ft, plug 2002 ft, flowing to sump by heads, mud, water, trace oil. Nine Springs Oil Co.'s Brinkinhoff 1, 9-7-30, td 3300 ft, bailing mud and water. J. L. O'Donnell's No. 1, 21-10-34, lcn. 101 Oil Co.'s Hollister 1, 35-5-33, td 358 ft, to deepen. Pacific Western Oil Co.'s No. 1, 21-10-34, dr shale 3690 ft. S. E. D. Oil Co.'s No. 1, 27-10-34, dr shale 1676 ft. Tide Water Associated's Leonis 1, 3-6-33, rig. Union Oil Co.'s Russell 1, 21-1-34, td 4579 ft, flowing by heads through casing, may test on pump. United Western Oil Co.'s No. 1, 16-7-30, grade. Valley Oil Co.'s Chief 1, 20-9-34, td 2315 ft, co. Vista Del Mar Oil Co.'s Williams 1, 16-4-26, td 1608 ft, co.

VENTURA COUNTY—Continental Oil Co.'s Casitas 1, 7-3-23, td 7912 ft, fsh for dr pipe. El Rio Oil-Canada's El Rio 1, near Oxnard, 6-1-23, td 3024 ft, showed some heavy oil, sd, may try on pump or may decide to dr deeper. Speik Oil Co.'s Speik 1, 35-5-19, td 2630 ft, wocs 10¾ in at 2462 ft. Giovanni Vai's Scott 1, 4-4-21, dr hard sand 450 ft.

SOUTHERN CALIFORNIA

NEWHALL — Barnsdall Oil Co.'s Rancho San Francisco 1, td 6472 ft, pumping 125 bbls, 36.8 gravity oil, and 750,000 cubic feet of gas; No. 2, 26-4-17, rur. Holbrook Pet. Co.'s Newhall Land 1, 28-4-16, dr shale 5625 ft, showing gas.

PICO CANYON—A. G. Burt's No. 1, 36-4-17, dr hard shale 1690 ft.

LYNWOOD—Calizoo Oil Co.'s Saulque 1, 9-3-13, dr sand and shale 6268 ft.

NORTH LONG BEACH—Geo. L. Clayton's Clayton 1, 32-3-12, sd 4895 ft.

FOX HILLS — Country Club Oil Co.'s Country Club 1, 19-2-14, sd 4895 ft.

ROSECRANS — Harmon-Fisher's Rosecrans 1, 19-3-13, rig.

HERMOSA BEACH — C. M. Henderson's No. 1, td 2804 ft, bailing.

DAVIDSON CITY—Hilldon Oil Co.'s Flood Control 1, 11-4-13, td 6105 ft, plug 5750 ft, pumping 60 bbls 23 gravity oil, cut 15 percent; No. 2, 13-4-13, bldg rig.

WALNUT—Julian & Criswell's Langstaff 1, 5-2-9, dr 1816 ft, showing on ditch.

PALOS VERDES—McClaren Bros.' No. 1, 27-4-14, td 3970 ft, redr to 1870 ft, bailing to test recement job.

MONTEREY PARK — Wales Pet. Co.'s Hogue 1, 26-1-12, dr sand and shale 1433 ft.

ORANGE COUNTY—Wm. Alexander's No. 1, 22-3-9, foundation. Mesa Oil Co.'s Mesa 1, 29-6-10, td 7865 ft, circulating mud, showing gas. Richfield Cons. Oil Co.'s Todd 1, 22-3-9, td 1700 ft, wocs 10¾ in at 1680 ft. Signet Oil Co.'s No. 1, 21-3-9, dr sand and shale 1550 ft. West American Oil Co.'s Irvine 1, 14-5-9, dr hard sand 4738 ft.

KANSAS

BARBER COUNTY—Pryor & Lockhart's Gant 1, c se 7-31s-13w, set 7-in 4428 ft, rust. Barbara Oil Co.'s Holmes 1-27, c nw nw 27-33s-13w, dr 4210 ft. Colonial Oil Co.'s J. W. Blunk Estate 1, ne ne ne 13-24s-14w, mim. W. I. Southern's Davis 3, se se ne 24-34s-15w, fsg 866 ft.

BARTON COUNTY—Stanolind's Struder 1, se se sw 26-16s-13w, 675 bbls oil, comp. Republic Nat. Gas Co. & Continental's Moeder 1, ne ne sw 25-17s-13w, fsg 2785 ft. Sam Murphy's Beck 1, ne ne ne 17-17s-12w, sd. S. E. Bailey's Hammeke 1, ne ne sw 12-18s-12w, set 8-in csg 2410 ft, dr 2810 ft. Shell's Schneider 1, c se 12-16s-14w, dr 2905 ft. Stanolind's Schartz 1, nw nw nw 33-19s-11w, set 10-in 203 ft, woc. Stanolind, Continental, & I.T.I.O. Co.'s Nat'l Bank 1, se se sw 36-16s-13w, lcn abd. Silverstein & George et al's Otte 1, se se nw 2-19s-14w, lcn abd.

BUTLER COUNTY—Simpson Oil Co. et al's Dennis 1-A, ne ne sw 15-26s-6e, dr 1510 ft. Maurer & Saco Oil Co.'s Connell 1, ne ne sw 27-29s-5e, dr 875 ft.

CHAUTAUQUA COUNTY—Robinson et al's Foster 1, sw sw sw 6-33s-12e, td 1732 ft, 4 bbls oil per day, 1690-1705 ft. C. L. Brosius et al's Garrett 1, nw sw nw 26-32s-11e, dr 610 ft. Buffington & Cohen's Hayes 1-A, se ne se 10-33s-13e, dr 1786 ft.

COWLEY COUNTY—Murta & Wilson's Turner 1, ne ne nw 30-32s-6e, 509 bbls oil & est 20 to 25 bbls wtr, 24 hrs, comp. Blair, Continental & McKnab's Miller 1, ne nw sw 14-32s-5e, dr 2175 ft. McCoy, Amerada & Wentz's Anderson 1, se nw ne 34-34s-6e, dr 2255 ft. Tom Palmer et al's Ogroskey 1, se se nw 31-32s-5e, dr 2505 ft. Trees Oil Co.'s Hornbeck 1, nw nw nw 5-33s-4e, dr 1235 ft. Tulsa Oil Co. et al's Dillon 1, nw nw ne 28-34s-3e, dr 2850 ft. Earl Wakefield's Powers 1, nw sw nw 8-32s-6e, rig.

ELK COUNTY—Republic Nat. Gas Co.'s Glasscock 1, se ne sw 19-31s-11e, set 8-in 1470 ft, woc. G. T. Berry's Zimmerman 1, sw ne se 15-30s-10e, td 2031 ft. Tyrrell's Sellars 1, se se se 11-31s-9e, dr 1500 ft.

ELLIS COUNTY—Empire's Samuelson 1, ne ne ne 31-11s-16w, woc. Billings' Smith 1, se se nw 14-12s-16w, set 5-in 3305 ft. Earl Wakefield et al's Burnett 1, nw nw ne 1-11s-18w, dr 1050 ft. Austin Drlg. Co.'s Karlin 1, nw nw nw 13-12s-18w, ru.

ELLSWORTH COUNTY — Orville Lee's Larkin 1, nw nw nw 15-16s-8w, abd 3080 ft.

GREENWOOD COUNTY—Ward McGinnis et al's Henley Estate 1, sw sw sw 25-25s-9e, A/w 3000 gals. Western Kan. O&R Co.'s Taylor 1, se se sw 6-27s-12e, dr 385 ft.

HAMILTON COUNTY—Barnsdall et al's Porter 1, sw sw ne 30-25s-41w, dr 4187 ft.

HARPER COUNTY—Magnolia's Arch Freeman 1, se nw sw 3-31s-6w, rur.

HARVEY COUNTY—Simpson & Noble et al's Pierce 1, sw se ne 25-22s-2w, dr 2280 ft. Hollow & Bradley's Nevfeldt 1, ne se nw 17-22s-1w, abd 3608 ft.

KEARNEY COUNTY—J. L. Murphy's Masonic Home 1, c nw¼ 1-26s-36w, fsg 519 ft.

McPHERSON COUNTY — Bradley Bros.' Barnholt 1, sw sw se 30-20s-5w, hfw 3063 ft, dr 3110 ft. Smith et al's Larson 1, nw nw sw 35-18s-5w, ur 8-in csg 2896 ft. C. E. Ash Drlg. Co.'s Broman 1, ne ne nw 19-17s-4w, ru. Fred C. Frank et al's Doles 1, se nw ne 12-19s-1w, co 1403 ft. Wamhoff et al's Nuse 1, se se sw 18-18s-4w, sd 672 ft. Tom Palmer et al's Regier 1, se ne nw 13-21s-1w, dr 3180 ft.

MITCHELL COUNTY—Geo. Seidhoff et al's Greiss 1, sw sw se 16-8s-10w, ur 6-in 3410 ft.

NESS COUNTY—Newton Dev. Co. et al's Tenny 1, nw nw se 19-18s-25w, set 6-in, woc. Jones & Lane's Page Milling Co. 1, se se nw 36-18s-26w, ru.

PAWNEE COUNTY—Simpson Oil et al's Hewson 1, se se sw 13-21s-17w, dr 2325 ft.

PRATT COUNTY — Atlantic, Empire & Skelly's Runyon 1, sw nw ne 11-27s-13w, set 8-in csg 3920 ft, rust.

RENO COUNTY—Carter, Continental & Empire's Bontrager 1, C-54, c e½ ne ne 26-24s-5w, dr 730 ft. Sam Schneider et al's Kroecker 1, ne ne ne 12-22s-5w, mim.

RICE COUNTY—L. E. Douglas' Coyne 1, ne se se 24-21s-8w, abd 3768 ft. John Hanna et al's Fulton 1, nw nw ne 24-19s-6w, abd 4002 ft. Fred Phillips et al's Hubenett 1, sw ne sw 23-20s-8w, testing. Union O&R Co. et al's Baker 1, sw sw ne 33-20s-6w, dr 3740 ft. Comanche Oil Co.'s Cramm 1, sw sw se 15-19s-9w, fl 67 bbls oil 40 min, went dead. Hipple et al's Wernett 1, ne ne nw 11-20s-6w, dr 2875 ft. Stanolind's Mooney 1, ne ne sw 5-19s-10w, abd 3470 ft. Skiles et al's Helmer 1, nw nw ne 7-19s-8w, ur 8-in csg 2815 ft. Skiles et al's Campbell 1, se se ne 28-19s-9w, ru. H. V. Holland et al's Brothers 1, se se se 12-21s-7w, sp. Gillespie et al's Strong 1, ne ne nw 9-18s-8w, rig. Bell O&G Co. & Shell's Wilkens 1, nw nw ne 23-21s-9w, dr 1700 ft. John Hanna et al's Marshall 1, ne nw nw 30-18s-8w, ru.

ROOKS COUNTY—Brunson Drlg. Co. et al's Casey 1, se se ne 22-9s-16w, dr 3480 ft. S. C. Hoel et al's Ives 1, sw sw ne 11-7s-18w, co 2325 ft. W. W. Kiskadden et al's Ham 1, sw sw nw 25-7s-19w, rig.

RUSH COUNTY—S. A. Murphy et al's Roth 1, nw nw sw 21-16s-18w, set 7-in csg 2668 ft, co 2695 ft. Duee & Brouk's Lebsack 1, se se ne 13-16s-16w, dr 2930 ft. Westgate-Greenland Oil Co. et al's Greenwalt 1, nw nw ne 19-19s-16w, td 3991 ft, 2500 ft wih. Carter et al's Prosch 1, cel n½ se 21-18s-16w, cor 3614 ft. Wakefield et al's Zimmerman 1, se se sw 7-16s-18w, lcn.

RUSSELL COUNTY—S. A. Murphy et al's Deines 1, se se sw 36-15s-15w, abd 3479 ft. Goldstein & Vernon O&G Co.'s Steinert Estate 1, ne se sw 34-15s-15w, dr 2820 ft. Aylward et al's Jones 1, se se nw 22-14s-13w, hfw 3230 ft. Billings et al's Boxberger 1, ne ne se 21-14s-14w, dr 2585 ft.

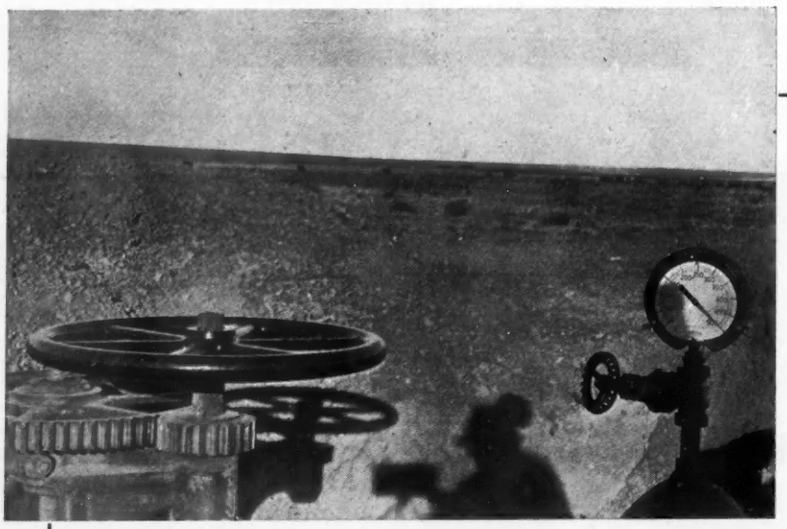
SCOTT COUNTY—Olson Drlg. Co. et al's Nolan 1, nw nw ne 13-19s-33w, fsg 4777 ft.

SEDGWICK COUNTY—E. B. Shawver's Furman 1, sw ne se 24-29s-3w, dr 2300 ft. Union O&R et al's Howell 1, sw sw sw 6-29s-1e, br. Ryan Consolidated et al's Williams 1, nw nw se 17-25s-2w, dr 655 ft.

STAFFORD COUNTY — Rosespring Drlg. Co. et al's Gray 1, nw nw nw 11-24s-13w, dr 2890 ft. Atlantic's Kachelman 1, se nw nw 13-25s-14w, dr 3915 ft.

SUMNER COUNTY—Texas Co.'s Harper 1, ne sw se 9-30s-3w, pb 3898 ft, 2000 gals A; swb 8 bbls oil. Glimac Oil Co. et al's Proud 1, sw se se 33-30s-1w, fsg 3698 ft. W. M. McKnab's Blair 1, sw sw sw 7-30s-1e, rig. Faulkner et al's Nevitt 1, ne nw ne 36-32s-6e, testing. John Burton's Springate 1, ne ne sw 30-33s-2e, sd 91 ft. National Ref. Co.'s Schwantes 1, nw sw ne 16-32s-3e, lcn. Douglas & Grear's Strickler 1, sw nw ne 30-32s-1w, rot rig.

TREGO COUNTY—W. I. Southern's Latimer 1, nw nw se 19-15s-22w, set 7-in csg 3979 ft, co. Turner et al's Rogers 1, c sw 3-15s-23w, rur.



FAST, EFFICIENT, LEAK-PROOF PIPE LAYING

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Truman-Smith Construction Company

L. D. 6 **El Dorado, Kansas**

NORTH LOUISIANA

BIENVILLE PARISH—Desoto Oil & Gas Co.'s Wm. Ashley 1, sw se 15-16-10, 10¾ in csg 2109 ft, dr 4815 ft; Wm. Ashley 2, 15-16-10, lcn. Hunt & Seaboard's Good Pine 1, se se 30-14-5, top chalk 2377 ft, top Blossom 2822 ft, dr 5595 ft. Lide & Greer et al's Davis 2, w½ w½ 12-16-5, dr 2510 ft.

CADDO PARISH—W. J. Hunter's N. B. Stoer 1, 10-15-15, set csg on bottom at 6012 ft, per at 5990-6012 ft, tested dry, arr per around 5700 ft. R. W. Norton's Payne 1, se se 27-23-16, cor 10,989 ft. Prairie River Syndicate Hutchinson 1, 15-15-12, dr 7909 ft. Fallon Oil Co.'s Cupples 1, 24-16-13, run 5¾ in csg, td 5675 ft, prep to per.

CLAIBORNE PARISH—J. R. Bevill et al's Alex Edmonds 1, ne ne 16-20-5, dr 4620 ft. J. B. Bond's Burgess 1, 3-20-5, arr acidize, td 5800 ft.

DE SOTO PARISH—Grogan Oil Co.'s Ramsey A-1, se nw 36-11-11, arr test 2950 ft. Pearl Oil Corp.'s Joyner 1, 28-11-12, dr below 4170 ft.

FRANKLIN PARISH—Jensen et al's Grayson 1, c ne 36-12-6e, top Cockfield 575 ft, claim so, setting csg, td 1811 ft (Cane River).

GRANT PARISH—R. W. Fair et al's R. L. Gay 1, 46-6n-3w, elev 100 ft, top Cockfield 1070 ft, top Cane River 2262 ft, top Wilcox 2605 ft, so 2888 ft, sd 3000 ft.

LINCOLN PARISH—G. E. Burford et al's Hanna 1, w½ se 34-18-4, ru. H. D. Easton-Belmont Quadrangle Drlg. Co.'s Dye 1, ne ne 21-19-4, dr 5042 ft. E. T. Oakes, Eason & Evans' R. L. Sanderson 1, 30-18-1w, dk. Glassell & Glassell's A. P. Gray 1, 16-20-3e, wo 5620 ft, td, top Travis Peak 5313 ft.

MOREHOUSE PARISH—Rondeau et al's Clarke 1, 10-20-7e, owdd, td 3755 ft.

NATCHITOCHES PARISH—Jack Lent et al's Locke 1, 26-9-9, dr 2510 ft, last report. Roy Raines et al's Allen 1, 22-9-10, woc 220 ft.

RAPIDES PARISH—C. L. Decker's Lee Lbr. Co. 1, se ne 21-5-3w, abandoned 3550 ft. F. W. Martin & Co.'s Hill 1, 24-5-4w, fsg 580 ft. R. D. Webb's Brasher 1, 22-4-2, wo 5255 ft.

RED RIVER—Whitehurst & Glassell's LeLong 1, 25-12-11, mim.

SABINE — Deep Rock & Kirk-Greenway, Inc.'s Whitney Corp. 1, dr 5984 ft. A. C. Scott et al's Bowman-Hicks 1, 23-9-12, placed on pump at 3088 ft. E. Howard, Tr.'s Sabine Lbr. Co. 1, ne nw 24-9-12, dk.

TENSAS PARISH—Ark-La. Gas' Hardwood No. 1, 8-11-10e, dr 800 ft. Jones, Sherrouse & Snyder's Chicago Mill & Lbr. Co. 1, 30-12-10e, owdd 798 ft.

WEBSTER PARISH — Magnolia's D. G. Cox 2, 22-21-10, dr 7645 ft; Ira Cox 6, dr 6050 ft; G. W. Cole 2, dr 6525 ft. Ohio's S. P. D. Coyle 1, 23-21-10, 7 in csg 8452 ft, testing; L. M. Gardner 1, dr 7619 ft. Standard's E. L. Stewart 1, dr 7295 ft.

SOUTH LOUISIANA

ACADIA PARISH—Humble's Federal Land Bank 1, North Crowley prospect, 34-8s-1e, dr shale 7944 ft. John Mayo et al's Bank of Commerce 1, e of Tepetate field, 19-7s-1e, dr shale 6010 ft.

AVOYELLES PARISH—Coastal Mineral's Purdy Haas 1, 25-2n-3e, sd 500 ft.

CAMERON PARISH—Humble's Bell-Hanszen 1, Hanszen prospect, 5-12s-6w, running 9⅝ in csg at 7637 ft. Pure's State Mallard Bay 2, Mallard Bay prospect, 14-13s-3w, driving piling. Superior's State Gulf of Mexico 1, in Gulf of Mexico, 4-15s-8w, driving piling. Southern Oil Co.'s State Maritime 3, 12s-10w, abn 2611 ft.

EAST BATON ROUGE PARISH—Louisiana Crusader Oil Co.'s State 2, University Block, 65-7s-1w, drilling cement plug 2182 ft. Cavalier Oil Co.'s Elliott 1, n of Hope Villa, 3-8s-2w, fsh 6115 ft.

EVANGELINE PARISH — Continental's Tate 1, Villa Platte area, 44-3s-2e, ru.

IBERIA PARISH—Hamil & Smith's Baez 1, Patoutville area, 35-12s-7e, abn 7962 ft. Jefferson Lake's Lake Peigneur 414, Lake Peigneur prospect, 12s-5e, coring sandy shale at 6646 ft.

JEFFERSON DAVIS PARISH—Louisiana Crusader Oil Co.'s Langley 1, Fenton area, 36-7s-5w, running 7-in csg at 9045 ft. Stanolind's Calcasieu National Bank B-2, China prospect, 28-7s-3w, dr shale 8315 ft; same operator's Calcasieu National Bank 2, South Jennings area, 10-10s-3w, abn 9180 ft. Union Sulphur's T. R. S. Farms 1, South Roanoke area, 23-10s-4w, dr shale and lime 6698 ft.

LAFOURCHE PARISH — Fohs Oil Co.'s State Long Lake 1, in Long Lake, 65-17s-19e, testing 9604 ft. Gulf's State 3, sw of Marchland, 36-23s-21e, driving piling.

PLAQUEMINES PARISH—Gulf's Quarantine Bay QQ 3, 36-23s-21e, driving piling. Tide Water's Manhatten Fruit Co. 3, Venice dome dr shale 6400 ft.

ST. BERNARD PARISH—Gulf's Lake Lery 2, Lake Lery prospect, 28-14s-14e, dr shale 6530 ft. Southern Sulphur Co.'s State 2, in Lake Borgne, 38-14s-15e, dr shale 3358 ft.

ST. CHARLES PARISH—Amerada-Louisiana Land & Exploration Co.'s State 1, Black Prince Island prospect, 13-15s-20e, dr hard sand at 7136 ft.

ST. LANDRY PARISH—Gulf's Haas Hirsch 1, Krotz Springs area, 12-6s-7e, dr shale 5460 ft.

ST. MARTIN PARISH—Texas Co.'s State 3, Lake Mongouloi prospect, 14-10s-9e, making drill stem test at 7850 ft.

ST. MARY PARISH—Texas Co.'s State Bateman Lake 1, Morgan City prospect, 21-16s-12e, dr shale 10,541 ft; same operator's State Horseshoe Bayou 1, on Horseshoe Bayou, 40-7s-9e, conditioning mud 12,261 ft.

VERMILION PARISH — Continental's Brookshire 1, Abbeville area, 66-12s-3e, dr shale 6498 ft.

OKLAHOMA

BECKHAM COUNTY—Carter's Bingham 1, ne ne ne 31-8n-26w, abd 2214 ft.

CADDO COUNTY—Clyde Becker et al's Pharris 1, cse se nw 24-6n-12w, dr 4540 ft.

CARTER COUNTY—Shell's Smith 1, cnw se ne 30-5s-1e, dr 3100 ft.

CLEVELAND COUNTY — Hollenback's Stinson 1, nw nw ne 17-9n-2w, dr 7178 ft.

COMANCHE COUNTY — C. V. Morris' Young 1, se ne se 24-3n-10w, dr 1000 ft. Holliday's Kuntz 1-A, cse ne se 21-4n-11w, dr 2750 ft.

COTTON COUNTY—I. T. I. O. Co.'s Collins 1, ne ne ne 18-4s-10w, lcn.

CREEK COUNTY—Continental et al's Community 1, ne ne sw 7-15n-7e, lcn.

GARFIELD COUNTY—Ohio's State 1, sw sw sw 13-23n-2w, co to perf csg.

GARVIN COUNTY—Carter's Potts 1, c e½ se nw 36-1n-13w, pb 431 ft, woc.

GRADY COUNTY—Gulf's Thomas 1, sw nw nw 14-4n-5w, woc 398 ft.

GRANT COUNTY—Carter et al's Crisman 1, nw sw nw 16-25n-3w, dr 1884 ft; Kolarik 1, c sl s½ sw 4-28n-5w, dr 3183 ft.

HASKELL COUNTY—Continental's Anderson 1, sw se ne 33-8n-20e, dr 5080 ft.

HUGHES COUNTY—Cap Rock Oil Co.'s Parks 1, csw se 34-7n-8e, abd 4616 ft. Chas.

Above and below: Scenes on a recent Dewey T. Ross pipe line job in Texas.

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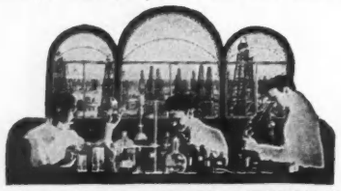

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Analyses of oil field brines, cores, gas, oil, and minerals. Field gas testing. R. H. Fash, Vice-President; Long distance 138. 828½ Monroe Street, Fort Worth, Texas.

Thornton's Eason 1, ne ne nw 7-9n-11e, td 3028 ft, ur 7-in csg. E. H. Moore's Buck 1, nw sw sw 21-8n-10e, dr 2830 ft. Moroney & Healey's Field 1, cnw sw 11-9n-11e, dr 2103 ft.

JACKSON COUNTY—Ace Gutowsky's Lee 1, nw nw se 36-2n-19w, lcn.

JOHNSTON COUNTY—Neff & Godfrey's Chapman 1, csw se sw 36-4s-4e, mit.

KAY COUNTY—Higdon et al's Nieman 1, ne nw ne 9-26n-3e, fsg.

KIOWA COUNTY — Kiowa Oil Corp.'s Finder 1, csw ne 4-6n-20w, dr 675 ft. Ace Gutowsky's Booker 1, nw nw nw 33-2n-18w, dr 440 ft.

LATIMER COUNTY—Clark Drlg. Co. et al's Wilson 1, cse se 15-5n-18e, dr 6340 ft.

LINCOLN COUNTY—Exchange Drlg. Co.'s Dowell 1, se se nw 10-14n-6e, td 3065 ft, shot with 70 qts, P. 48 bbls oil, 24 hrs, comp. Ross Oil Co.'s Bailey 1, se se se 22-15n-6e, dr 1500 ft. Cimmaron Oil Corp.'s Frank Orner 1, csw se 31-17n-2e, td 240 ft, woc.

LOGAN COUNTY—Freeland et al's Woods 1, se se sw 28-17n-1e, rog.

LOVE COUNTY—Sinclair Prairie's Stockton 1, se se sw 26-6s-2w, dr plugs & swb 20 bbls oil 12 hrs.

MAJOR COUNTY—Ed V. Parsons et al's Patzkowsky 1, c nw 10-20n-11w, cel & rog.

McCURTAIN COUNTY—Wilcox O&G Co.'s No. 1, sw se sw 30-2s-27e, dr 425 ft.

NOBLE COUNTY—Lincoln Oil Co. et al's Neil 1-A, ne ne ne 15-23n-2w, fsg 4826 ft. Summitt Drlg. Co. et al's Dolezal 1, se se sw 8-22n-1w, abd 5254 ft. Stanolind & Amerada's Johnson 1, nw nw se 4-20n-2w, dr 5107 ft.

OKFUSKEE COUNTY—Riverland Oil Co.'s Board 1, ne nw se 10-13n-10e, sso 1600 ft.

OKLAHOMA COUNTY—Sunray Oil Co.'s Dickson 1, nw nw nw 17-11n-1e, dr 6225 ft.

OSAGE COUNTY—Mid-Co Oil Corp.'s No. 1, se se sw 22-23n-6e, dr 2585 ft. Norbla Oil Corp.'s No. 1, se se se 36-23n-6e, spd.

PAWNEE COUNTY—Carter's Wells 1, ce½ se nw 30-23n-5e, dr 882 ft.

PAYNE COUNTY—H. F. Young's Jenkins 1, se ne se 4-17n-3e, dr 4595 ft. Riddle's Van Zandt 1, nw nw se 16-18n-3e, abd 3910 ft.

PONTOTOC COUNTY—Southern Oil Co.'s Young 1, ne ne se 17-3n-7e, td 470 ft, co 440 ft. Roodhouse et al's Booth 1, se nw se 20-2n-6e, dr 4695 ft. Clark Drlg. Co. & Delaney's Richardson 1, se se sw 30-4n-8e, dr 3278 ft. Sandbach et al's Whittaker 1, nw ne se 31-4n-6e, abd 3754 ft. Boettcher O&G Co.'s Cann 1, se nw ne 25-4n-7e, dr 2293 ft. Norbla Oil Co.'s Kennedy 1, se se ne 13-2n-5e, dr 800 ft. W. E. Delaney et al's Payton 1, ne ne se 1-4n-7e, owdd, otd 2077 ft, to dd to Wilcox, rur.

POTTAWATOMIE COUNTY—Stanolind & Amerada's Billington 1-B, sw se sw 32-9n-3e, woc 5320 ft, rust. Richborn Oil Co.'s Fidler 1, ne ne nw 9-5n-5e, sd. Atlantic's Dooley 1, se se sw 9-11n-5e, dr 4198 ft. Mid-Continent et al's Ne-Thah-Pea-Se 1, se se ne 24-11n-4e, dr 3863 ft.

PUSHMATAHA COUNTY—Halliburton et al's Bogwell 1, sw ne ne 30-3s-15e, dr 2825 ft.

SEMINOLE COUNTY — Mid-Continent's Schrupp 1, sw nw sw 24-5n-6e, dr 2661 ft.

STEPHENS COUNTY—Carter et al's Harley 1, c ne ne 24-2s-4w, dr 6030 ft. Coline Oil Co.'s Johnson 1, c sw se ne 1-2n-8w, dr 6665 ft. Ed Parsons et al's Blake 1, c sw nw 22-2n-8w, dr by 1798 ft. Helmerich & Payne's Graham 1, c sw sw ne 12-1n-5w, dr cement at 5014 ft. Gavin & Kolb's Bond 1, cwl nw ne 36-2s-7w, td 2004 ft, D & A.

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TILLMAN COUNTY—I.T.I.O. Co. et al's Hatler 1, c sw ne 32-2s-17w, Av. 74 bbls oil & 156 bbls wtr on pump. Smith's Hammill 1-A, ne nw nw 6-5s-15w, abd 2425 ft.

WASHITA COUNTY — John Koberg's Harms 1, c nw nw ne 6-10n-16w, rur 360 ft.

EAST TEXAS BORDER COUNTIES

MARION COUNTY—Ark-La. Gas Co.'s C. C. Braden, T. Braden sur, elev 211 ft, dr 6885 ft; Allen Houston 1, A. de los Santos Coy sur, dr 4950 ft. The Hunter Co.'s Fonda 2, A. de los Santos Coy sur, dr 5209 ft. Fohs Oil Co.'s McReynolds 1, A. de los Santos Coy sur, dr 3665 ft. Mid-Continent Pet.'s Sory 1, A. de los Santos Coy sur, dr 3125 ft & United Prod. Corp.'s J. H. Hutchinson 1, A. de los Santos Coy sur, rigged up, wo.

PANOLA COUNTY—Danciger O&R Co.'s J. W. Tatum 1, Alfred Bissell sur, spd and ru. Glassell & Glassell's Pierce & Chesbro 1, Julia Soape sur, dr 5315 ft. Magnolia Pet. Co.'s E. A. Hull 2, T. Applewhite sur, elev 222 ft, 9⅝ in csg 5948 ft, dr 6130 ft.

SHELBY COUNTY—Wm. Redditt et al's Pickering Lbr. Co. 1, Stephen English sur, elev 303 ft, top Blossom 2310 ft, showing estimated 5 mil ft gs after use of 2000 gallons of acnd, td 4109 ft (Paluxy).

SOUTH TEXAS

CORPUS CHRISTI DISTRICT

ARANSAS COUNTY—Barnsdall's Edwards 1-A, Wm. Lewis sur, dr 8721 ft.

BEE COUNTY—Butler and Turner's J. R. Scott 1, sec 7, abnd 5005 ft. J. R. Dougherty's R. T. Hicks 2, blk 47 of Hicks Est., coring 4420 ft.

BROOKS COUNTY—Gifford Oil Co.'s Wm. Singer 1, sur 630, abnd 4210 ft. Standard of Texas' Mestina 1 (Lse. 2), B. B. Garcia sur, coring hard sand 5541 ft.

CAMERON COUNTY—Ruez-Morton, Inc.'s United Land Irr. Co. 1, lot 7, blk 402, dr 4825 ft. Stapper Pet. Corp.'s Port Isabel Irr. Co. 1, blk 17, Port Isabell Irr. Co. subd, fshg 8000 ft.

GOLIAD COUNTY — Dirks Bros.' Allen 1-A, Obid Marshall sur, coring for Pettus 4180 ft. Goliad Oil Co.'s S. E. Cole 1-A, lot 33, Rge. 4, setting protective csg just below 4500 ft.

JACKSON COUNTY—Cockburn & Hargrove's Santa Theresa Farms 1, Tr. 34, sec 23, dr 4695 ft.

JIM WELLS COUNTY—John Camp Prod. Co.'s J. W. Bird 1, Los Presenos de Abajo gr, attempting to blow out pump in heavy mud and move off rig, td 5739 ft; W. E. Pipe 2-B, sec 13, dr 3780 ft. Tom Graham and Reese's Martha Earhart 1, John Suggs sur, running tbg, td 4005 ft. Magnolia et al's Seeligson 7, attempting to test another snd dst snd 5380-86 ft, wp 200 lbs, recovered 35 high gr oil, some wsh wtr snd, soft snd w/gas distillate odor 5401-04 ft, td 5404 ft. Premont Royalty Co.'s H. Felaey 1, sec 72, Haldeman subd, dr 2380 ft. Wellington Oil Co.'s Sevier 1, coming out to change bits, cored dry snd 6170-93 ft, dr dry hrd snd 6193-6216 ft, td 6262 ft.

KLEBERG COUNTY—John J. Camp Prod. Co.'s C. Phillip Wardner, Tt. 2, Paco Ancho de Arriba gr, dk.

LIVE OAK COUNTY—Loma Oil Co.'s L. Jacob Corp. 8-B, GH&H sur, sd; Schwartz 1, Mark Killely sur, dr plugs fr sur csg. F. D. Salter et al's I. W. Griffith 2, sec 20, junked 924 ft.

NUECES COUNTY—Mills Bennett Prod. Co.'s Phillip Wardner, Tr. 2, Paco Ancho coring 4820 ft. J. K. Culton's I. M. Singer 1, lot 13, blk 39, Flour Bluff and Encinal Garden Tr., dr 4829 ft. Fain Gillock et al's Robt. Poenisch 1, sec 32, lot 11, Flour Bluff & Encinal Gardens Tr., lcn; Robt. Poenisch 2, lot 7 and 8, sec 32, Flour Bluff & Encinal Garden Tr., dk. W. L. Hinds' Lucy J. Rivers 1, sec 301, rec 2 joints of sw on dst 5668-86 ft, dr ahead. Phillips Pet. Co.'s John Harney 1, sh 11, Harney Lands, coring 6597 ft. Seaboard Oil Corp.'s James P. Luby 1, blk 4, sec 2, Luby subd, prep to re-work because of increasing gas-oil ratio and pressures—squeeze job on perf, prep to re-perf, td 5332 ft. Seaboard's Chapman et al 1-C, sec 111, ru. Shell's State of Texas 1, Laguna Madre Bay, lcn dropped. Southern Minerals Corp.'s Richard King 1, sec 32, still trying to pull dr pipe, td 6515 ft; H. G. Yakey 1, sec 38, dk. Taylor Pet. Co., J. V. Styles 1, sec 18, coring 6509 ft. United Prod. Corp.'s W. H. Harvey 1, Garcia sur, testing 9002 ft.

REFUGIO COUNTY—J. V. Chew & O. V. McIntire's F. E. Kloesel 1, sec 11, lcn. Edwin M. Jones' Ben Shelton 1, dr 5193 ft. Randon Oil Co. & American Liberty Oil Co.'s J. Vincent 1, blk 9, prep to spud. United Prod. Co.'s J. J. O'Brien 12, Refugio Town Tracts, pb after running electric formation tester, td 9225 ft.

SAN PATRICIO COUNTY—Conroe Drill-

ing Co.'s F. L. Foley 1, C. F. Delmas sur, abnd 6505 ft. Danrey Oil Co.'s Jean Davis 1-A, Wm. Boyd sur, laying lines after mi heavier rig. Eleanor Oil Co.'s J. F. Green Est. 1, T. T. Williamson sur, wshg down around 5900 ft prep to set csg at about 6800 ft to test shows. td 7305 ft. Humble's McCampbell 1, R. Martinez sur, coring 4580 ft. Phillips' Ivey 1, comp flowing 8 bbls per hour 5/32 in ch, tp 600 lbs., cp 875 lbs, td 5410 ft. Plymouth Oil Co.'s J. F. Odem 1-A, Archibald Herron sur, dr 2200 ft. Wellington Oil Co.'s James F. Welder 1-B, Cubage & Miller subd, sec 6, ru.

VICTORIA COUNTY—Magnolia's Beck 1, T&NO sec 1, ru. Harry Stekoll & Richardson's Noll 1, C. W. Vickery sur, abnd 5512 ft. Transwestern Oil Co.'s A. M. McFaddin 3, J. Viarin sur, dr 6231 ft.

WILLACY COUNTY—Ruez-Morton, Inc.'s Francisco Armendiaz 1, Little sh 4, dk; Johnson-Stillman 1, sd 650 ft. Shell's Yturria 1, sh 64 San Juan de Carritos gr, fshg 10,286 ft.

SAN ANTONIO DISTRICT

BEXAR COUNTY — American Gas Co.'s Oliver 5, M. F. Rodriguez sur, r 3460 ft. Carter & Ingersoll's Louis Mann 1, Stephen Jett sur, td 1357 ft. L. K. Oil Co.'s William A. Russell 1, Fernando Rodriguez sur, set 21 ft 10 in.

CALDWELL COUNTY — Allbrith et al's Smith 1, James Berry sur, ru. B. C. Armstrong et al's Bell 1, n portion of Luling Townsite, dk. R. T. Belcher's Moody 1, Solomon Seal sur, lcn. Fain Gillock's Walker 1, A. Floyd sur, lcn. J. O. Mack's B. Withers 1, W. House sur, dr 1500 ft. Rosita Oil Co.'s Lockhart State Bank 1, John Roe sur, recemented 2204 ft. Spokane Oklahoma O&G Co.'s K. Dougherty 1, J. Tyler sur, dr 1250 ft. Stapper Pet. Co.'s M. August 1, A. Floyd sur, prep to mi; E. Martin 1, A. Floyd sur, wo pump, td 2436 ft. F. R. Williams' H. L. Rodenberg 1, James Berry sur, swabbing, showing oil 2010 ft.

DIMMITT COUNTY — Paul C. Teas & Maryland Oil Corp.'s McKnight 1, sec 23, will start soon. Wilcox O&G Co.'s Light Ranch 1, I&GN section 527, dr 7295 ft.

EDWARDS COUNTY—Amon G. Carter et al's Sweeten Ranch 1, sec 49, dr 200 ft.

FRIO COUNTY—Amerada's Harrigan 1, blk 77, Salvador Flores sur, dr Buda lime in side tr hole at 6230 ft, td 6290 ft. H. A. Pagenkopf & L. C. Jameson's Blackaller Est. 1, James Courley sur, sp.

GUADALUPE COUNTY—Kennedy & Crowley's Gus Jahns 1, Jose K. Davis sur, swabbing through tbg, showing little oil and mud, td 2507 ft. W. Scott Townsend's Tom Terrill 1, Jesus Cantu sur, dr 1935 ft.

KENDALL COUNTY — J. E. Landon & C. F. Peffley's C. A. Sidensticker 1, sur 257, lcn.

KERR COUNTY—S. W. Forrester's J. W. Bailey 1, A. L. Starkey sur, abnd 1125 ft.

MILAM COUNTY—Kingdorr Exploration Co.'s J. C. White 1, Bynum Wickson sur, mir.

TRAVIS COUNTY—J. F. Jourdan's Dr. J. V. Siegmund 1, A. M. Leavy sur, dr 650 ft.

WILSON COUNTY—Maryland Oil Corp. et al's Tremmell 1, M. May sur, abnd 5608 ft. R. G. Stanley's E. M. Hierholzer 2, R. Salina sur, will re-cement, td 1031½ ft.

LAREDO DISTRICT

DUVAL COUNTY—Conservative Oil Co.'s DCRC (Sun) sur 47, lcn. Government Wells Oil Co.'s Lundell 1, sec 140, comp 11mcf gas ¾ in ch, wp 640 lbs, spray little oil, td 1520 ft; H. A. Lundell 2, sec 140, mi. Hiawatha O&G Co.'s M. M. Miller 2, blk 24, Ball subd, sp; Southland Life Ins. 3, sec 15, Ball Ranch, dr 850 ft. Kepley Prod. Co.'s Sevier 2, Rafeal Rosalia gr, abnd 3518 ft. King Dr. Co.'s Atlee Parr 1, San Andres gr, sd boiler trouble, 5376 ft. Magnolia's F. Weil et al 1, sur 565, dr 2865 ft. Navarro Oil Co.'s E. M. Rossi 1, sec 11, dr 1800 ft. Penn-Palangana Oil Co. et al's C. K. Gravis 1, sec 254, sd for wtr 4500 ft. Standard of Kansas' Atlee Parr 1, San Andres gr, 80-ac lse, dr 3925 ft; Rossi 1, Santos Flores gr, blk 10, ru.

JIM HOGG COUNTY—Magnolia's Merchants Bank 43, sec 151, dr 1520 ft.

McMULLEN COUNTY—W. P. Howard's B. C. Claunch 8, M. Hely sur, comp for 48 bpd on pump, snd and sndy sh 1053-67 ft, td 1120 ft. Edwin M. Jones' Ezzell 5, moving rig; Harry Ezzell 6, sp, set sur csg, moved off rig but will move back. J. T. Lanier's Hagist 1, sur 481, depth corrected 450 ft, sd. C. C. Shumway et al's Shiner Ranch 10, sec 51, dr 1000 ft.

STARR COUNTY—Carter & Stiernberg's Quirino Vela 1, por 85 el Tangue Ranch subd, dr 1325 ft. John H. Clopton et al's Dionicio Tiferina 4, blk 12, sh 14-C, por 80, J. of Camargo, sd for heavier rig 1630 ft. K. E. Meeren's Starr County Cattle Co. 1-A, por 89, showing heavy gas pres, lots gas and spraying about 1½ bph of distillate 5/32 in ch. Texas Co.'s A. V. Guerra 6-A, por 67, J. of Mier, ru. Transwestern Oil Co. et al's T. B. Slick Est. 2, sec 527, junked and abandoned flowing hot sw, td 5883 ft. Gilcrease Oil Co.'s De Castillo 1, sh 7-D, por 77, running csg, 783 ft.

WEBB COUNTY — Bridwell Oil Co.'s S. Benavides 1, sec 691, dr 1900 ft. O. W. Killam's F. Perez 1, sur 1007, abnd 2558 ft. Lutex Oil Co.'s Lone Star Con. Co. 2-A, por 12, dr 2400 ft. Paul Meaders et al's Garcia & Villareal 1, sec 338, blk 5, lcn. J. R. B. Moore's M. D. Slator 1, blk 74, Slator Ranch subd, sp. Howard Nessley's A. M. Bruni Est. 3, sur 449, lcn. Perkins, Cullum & Achning's Louisa R. de Garza 1, sur 711, dr 1250 ft. Randon Oil Co.'s Joe C. Palmer 1, sur 474, prep to sp.

ZAPATA COUNTY — Gilcrease Oil Co.'s Antonio Trevino 2, blk 12, sec 8, dr 1400 ft. O. W. Killam's A. M. Bruni Est. 1, blk 83, Killam subd, El Ranchito Pasture, dk. Ray L. Martin's S. Vela 1, blk 44, sh 2 El Grullo gr, lcn. J. O. Sheffield's C. H. Buck 1, blk 15, J. O. Sheffield subd, sur 273, snd 1950-71 ft, 5½ in csg set 1960 ft on packer, testing 1971 ft. Starr Dev. Co.'s Paula V. de Garza 1, blk 34, C. A. Douglas subd, dr 1135 ft.

TEXAS GULF COAST

AUSTIN COUNTY—Cockburn & Hargrove's Bartay 1, w of Bellville, M. Steussy sur, dr shale 2835 ft.

BRAZORIA COUNTY — Pure's Slade 1, Peach Point prospect, S. F. Austin sur, abst 20, repairing dk 7842 ft.

FT. BEND COUNTY—Marlen Oil Co.'s Jurea 1, Needville prospect, H&TC sur, sec 26, sd waiting on orders at 6523 ft. Schwab & Gem Oil Co.'s Arcolla Sugar Mill 1, Arcolla prospect, D. Fitzgerald sur, shale 1878 ft.

HARRIS COUNTY—Humble's Settegast 1, Friendswood prospect, Perry & Austin sur, dr shale 5027 ft. Stanolind's Oates 1, Clinton area, C. Martinez sur, testing 5760 ft. Superior's Butler 1, Bammel area, J. Ehrhardt sur, dr shale 8963 ft.

JEFFERSON COUNTY—Magnolia's Phelan 1, Cheek area, S. Stivers sur, shut in 8460 ft. Hebert & Smith's Broussard Hebert 1, Pine Island area, J. W. Gaffey sur, dr shale 4518 ft.

LIBERTY COUNTY—Jack Frazier's Hanchey 1, Hardin area, H. B. Johnson sur, dr plugs 7612 ft.

MATAGORDA COUNTY — Continental's Hawkins 2, Sheppards Mott area, D. McCarthy sur, dr ahead below 5409 ft. Royal Oil Co.'s Ewing 1, Sugar Valley area, A. S. Sojourner sur, dr shale 7562 ft. United North & South Dev. Co.'s Lambert 1, sw of Buckeye, M. Cotton sur, dk; same operator's Stoddard 1, same area, M. Cotton sur, testing 9978 ft.

MONTGOMERY COUNTY—G. E. Gates' Texas Long Leaf Lumber Co. 1, Splendora area, Walker County School Land sur, abn 6251 ft. Texas Co.'s Crawford 1, Willis prospect, U. Springer sur, dr shale 800 ft.

SAN JACINTO COUNTY—Cockburn et al's Whitten Estate 1, Keno area, Wm. West sur, dr shale 5284 ft.

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A complete line of shipping and merchandising tags—Including those for your special requirements. . . . Prompt, personal service that saves you time and money.

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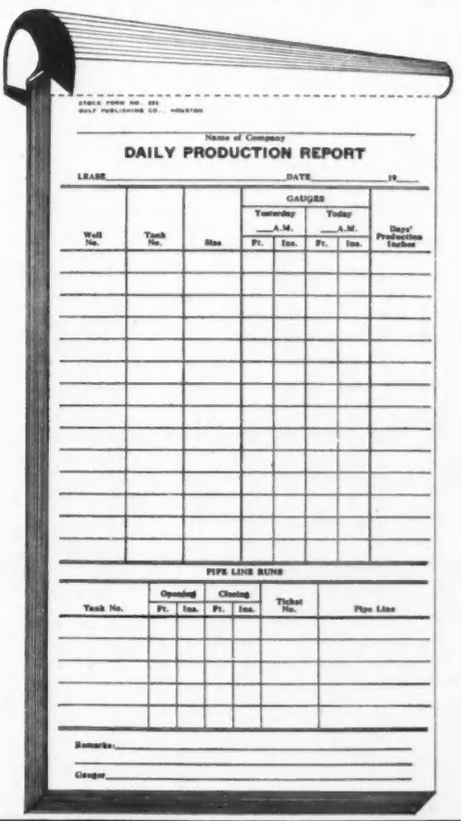
OIL COMPANY STOCK FORMS



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ADJUSTING NUT OF RIDGID PIPE WRENCH

Always Spins Easily

IN ALL SIZES 6" TO 60"

Guaranteed housing won't warp so the adjusting nut never binds. Wide open, it doesn't clog with sand and mud.

Add to that the saving of 75% of your wrench repairs because of the unconditionally guaranteed housing; the no-slip no-lock replaceable jaws of chrome molybdenum alloy, hook jaw with handy pipe scale—a wrench that has earned its world-wide popularity.

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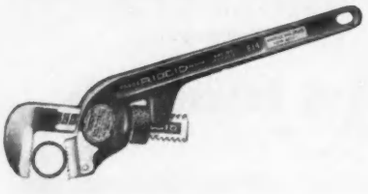
THE RIDGE TOOL CO.
ELYRIA, OHIO, U. S. A.

RIDGID PIPE TOOLS



You'll like this End pattern for pipes against flat surfaces and in tight places, plus the many advantages of the regular RIDGID.

THE NEW PIPE LINE RADIO

1/4 AS HEAVY
5 TIMES AS SENSITIVE

This pipe line radio is especially designed for unskilled operation to quickly identify the line under ground and follow it out. This is the only system by which an individual line can be followed without confusion, because of close proximity to parallel lines, crossings, etc. Laterals and changes in diameter of main line are easily located.

Receiver complete with batteries, weighs 7 lbs. Transmitter complete with batteries, 10 lbs. Complete with spears and leads to connect transmitter to line, carrying case and headphones.

Price Complete $180.00

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ENGINEERING LABORATORIES, INC.
KENNEDY BUILDING, TULSA, OKLAHOMA, U. S. A.
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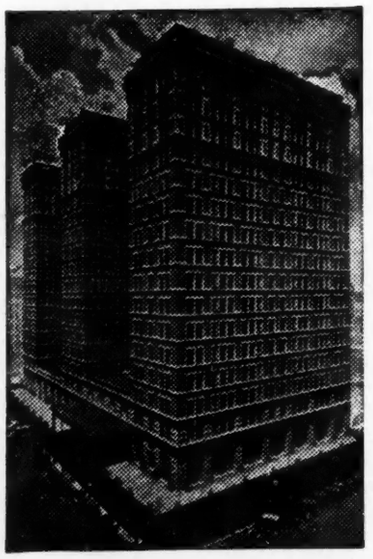
In Houston It's the Rice



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1,000 Rooms $2.50 and up

"Houston's Welcome To The World"

R. Bruce Carter, Manager

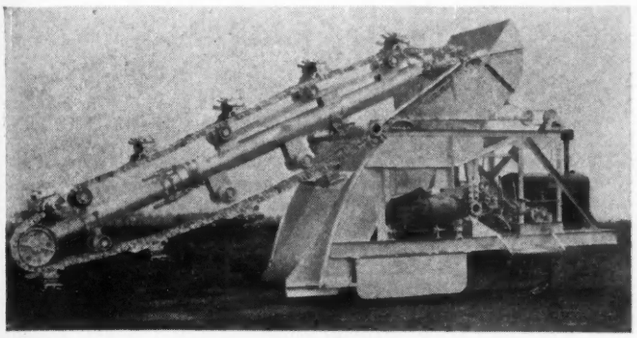
NEW PRODUCTS FOR THE FIELD
Machinery • Tools • Catalogs • Books

DITCHER
The Buckeye Traction Ditcher Company

The Buckeye Traction Ditcher Company, Findlay, Ohio, announces a new service ditcher, Model 120, to meet the demand for a smaller ditcher with the operating advantages of the company's larger Model 160.

The new ditcher's most outstanding feature is its shiftable boom which enables the machine to dig right along side of curbs, close to trees, poles and other obstructions. This boom rides on two heavy steel tubes and is readily moved to either side or to any intermediate point, bringing the edge of the ditch to within 4 inches of the outside of the Alligator traction treads or within 10 inches of the over-all clearance of the machine. Over-all width of the machine is only 6 feet 3 inches.

Use of tubular steel boom construction is a feature. Two telescoping sections provide means of readily adjusting the boom for normal maximum cutting depths of 6 feet, 8 inches, or 10 feet. Cutting widths range from 16 to 30 inches.



Buckeye Model 120 Ditcher

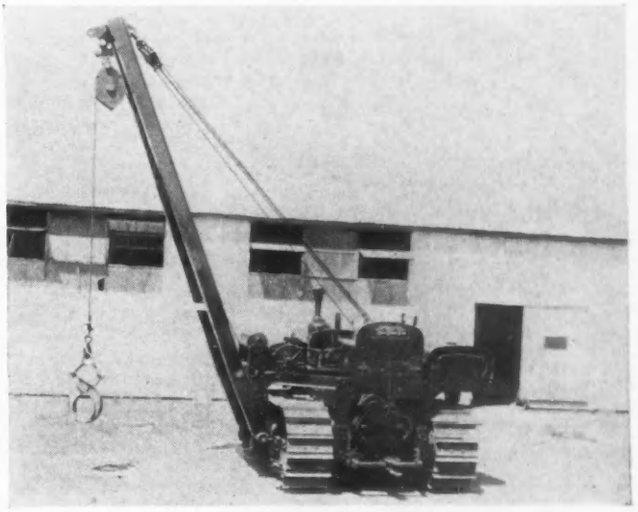
A saving in weight is effected by the use of electric alloy, heat treated steels throughout the machine, which adds to the ease with which it can be maneuvered in close quarters. Bearing pressure on the Alligator treads is reduced to approximately 9 pounds per square inch. Low overhead clearance and low center of gravity with the boom raised for travel are big advantages.

PIPE LAYING BOOM
Muskogee Iron Works

The Muskogee Iron Works, Muskogee, Oklahoma, announces the new Model B-1 pipe laying boom for International Harvester Company TA-40 and TD-40 Trac-trac-Tors.

The boom is equipped with a 5-speed transmission which allows a range of single line speeds of 22 to 342 feet per minute with a single line pull of 24,000 to 3,300 pounds. Both load and boom drums are free rolling and are mounted on stationary shafts. Power from the tractor engine is transmitted from the tractor power take-off shaft through an oil-bath chain drive to an extension of the high-speed shaft of the 5-speed transmission. A chain drive connects the low-speed shaft of the transmission to a countershaft on which is mounted clutches to operate the load and boom drums simultaneously or individually. The boom itself is designed with a wide opening at the top so that the 10-inch oil bath self-aligning ball bearing sheaves an turn or swing as much as necessary without fouling the sides of the boom. The boom frame is made of heavy channels, welded together and securely bolted to large axles which transmit the load equally to the track support members of the tractor.

The boom has incorporated in it many desirable features, such as: oil-bath ball or roller bearings; spring attachment to prevent boom from sticking in upright position, perfect visibility from the driver's seat; adequate brakes to hold or release the load; provisions for sufficient counterweights



Muskogee Iron Works Pipe-Laying Boom

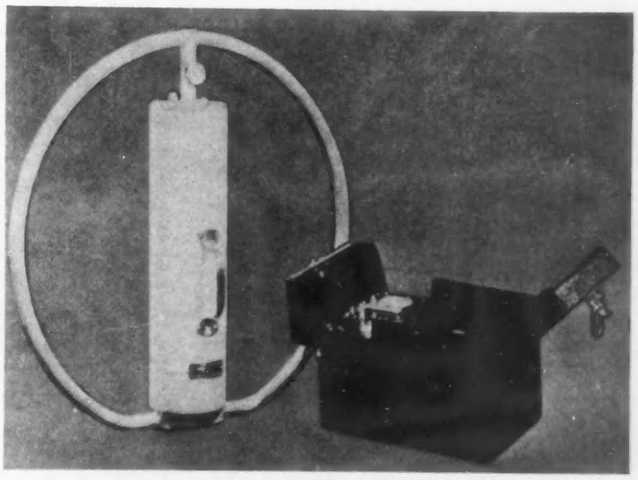
to allow the use of the boom with heavy pipe; equal weight distribution; automatic release which prevents the boom from being pulled into the frame and either bent or broken; and simple rugged construction.

CHROMASTIC ALUMINUM PAINT
Wailes Dove-Hermiston Corporation

The Wailes Dove-Hermiston Corporation, New York City, announces Chromastic Aluminum Paint—a new product with rust-inhibiting vehicle, identified by the opaque yellow color (of the vehicle).

PIPE LINE RADIO
Engineering Laboratories, Inc.

Engineering Laboratories, Inc., Tulsa, Oklahoma, announces a new pipe line radio especially designed for an unskilled person to operate. Used to quickly identify the line under ground and follow it out, an individual line can be followed without confusion, because of close proximity to parallel lines, crossings, etc. Laterals are identified by the presence of a distinct signal taking off to one side of the main line, and swedges are identified by sudden decrease in signal strength when the pipe line decreases. By holding receiver by the handle, in a horizontal position close to the ground and moving back and forth over the probable loca-



Engineering Laboratories Pipe Line Radio

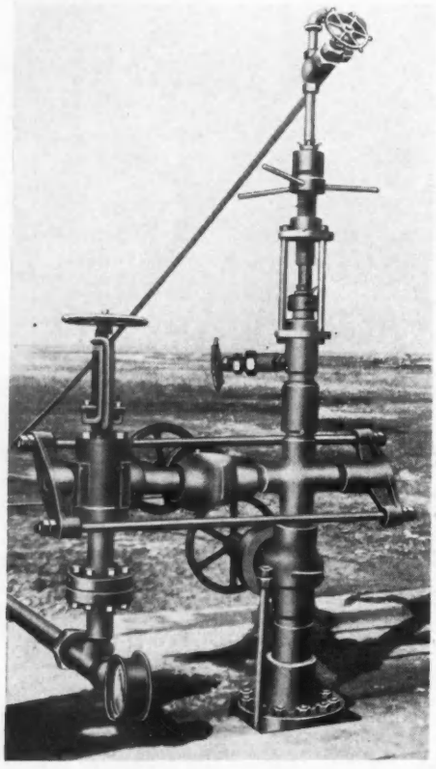
tion, the signal will completely disappear when the receiver is directly over the pipe.

The instruments come complete with cases, two spears and leads for connecting transmitter to line, batteries and head phones.

GAS LIFT

Acme Gas Lift Company

Acme Gas Lift Company, 1423 Maury Street, Houston, has placed on the market a new oil well flowing device designed to flow fluid from a well in which the natural pressure has dropped off to the point where it cannot produce the desired amount of fluid without artificial lifting.



Acme Gas Lift.

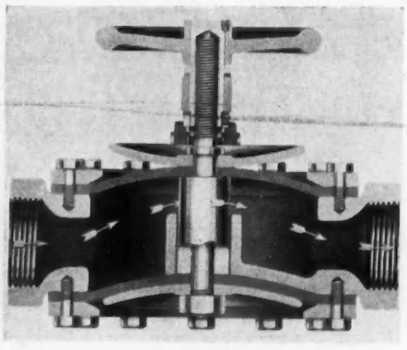
In using the Acme Gas Lift, it is not necessary to disturb the Christmas - tree hook-up in any way, except to install the Acme head. Nor is it necessary to erect a derrick over the well. A string of 1-inch seamless pipe is run in the tubing and anchored at the desired depth by means of a slip anchor provided on the bottom of the pipe. A perforated nipple is made up in the line immediately between the slip anchor and 1-inch pipe, and stage valves are made up in the line at any level desired (usually every 500 feet). These valves, which are controlled from the surface, are opened and closed successively until the desired flowing level is located. The annular space between the tubing and flow line being reduced considerably, small compressors can be used successfully.

According to the manufacturer, a portable test compressor will be provided at small cost to enable the operator to test the well to determine its production possibilities before installing compressor foundations. Also, a pulling machine will be furnished in event no derrick or hoist is available.

BALANCED DIAPHRAGM VALVE

McAlear Manufacturing Company

McAlear Manufacturing Company, Chicago, Illinois announces development of a new balanced diaphragm valve, which according to the manufacturer has the important feature of closing off tight, repeatedly, in service on fluids or gases containing foreign matter. Being balanced, it will open or close easily. There are no stuffing boxes or bellows, thus preventing all friction. When used on throttling service there are no bad effects from wire drawing.



McAlear Balanced Diaphragm Valve

The valve need not be removed from the line to change the diaphragm and the diaphragm is furnished of various compositions to take care of air, water, gas, acids or alkalis. Made of either ferrous or non-ferrous materials the valve can be suitably lined for all acids and alkalis, hot or cold. It will operate in any position, will not damage from freezing and can be either hand or motor operated.

CEMENTING BASKET

Baker Oil Tools, Inc.

Baker Oil Tools, Inc., 2959 E. Slauson Avenue, Huntington Park, California, announce a new all metal cementing basket for which is claimed greater strength, resistance to the action of acids, and adaptability to casing programs. While the applications of this new basket as an aid in placing cement around casing are the same as those of the Baker canvas basket, it is constructed entirely of metal and incorporates several features which improve its operation.

Baker All-Metal Cement Basket.

A cementing basket serves as an outside packer during cementing jobs. It protects the formation from cement contamination and from sloughings of cavings, and aids in the cementing job by preventing any dissipation of the slurry that might occur. The new basket is made up of a number of overlapping individual metal "petals" held in place with reinforced spring steel ribs. While running in, the petals fold inward closely around the casing and pass easily down the hole. When the casing comes to rest, the petals expand to their normal position with the upper portion of the basket forming a seal against the wall of the hole.

The petals are constructed of flexible sheet brass and are so designed that when fully expanded each petal overlaps the other by a sufficient margin to prevent the fluid above the basket from passing to the formation below. The reinforced spring steel ribs extend beyond the top of the petals and curl over above them. The spring tension of the ribs insures contact of the basket with the wall of the hole while the overlapping petal design makes this contact conform to the contour of the hole without wrinkling.

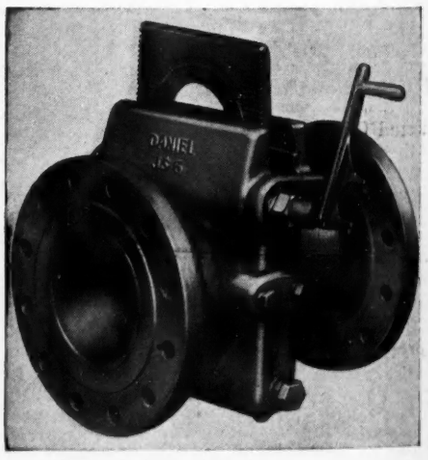
Because of the overlapping of the metal petals, the basket folds closely around the casing while it is being run in the hole, a fact which recommends the use of the metal "petal" cementing basket in casing programs which are based on minimum clearances.

ORIFICE FITTING

Daniel Orifice Fitting Company

Daniel Orifice Fitting Company, Los Angeles, is offering a new improved orifice fitting (Ejector Type JS) to replace the old style conventional orifice flanges most commonly used with a bypass.

With this device orifice plates can be inspected and changed in a very short time by the turn of a speed wrench. It offers great flexibility and will operate with any meter and can be used to measure air, gas, steam, oil, water, etc.



Daniel Orifice Fitting

This Week with the Industry's EQUIPMENT SUPPLIERS

Mulcahy Transferred to Oklahoma City for The Cavins Company

The Cavins Company, Los Angeles, announces appointment of John (Shorty) Mulcahy as supervisor of rental service agencies in the Mid-Continent fields. Before assuming his new duties, Mulcahy was San Joaquin Valley (California) agent for the company. For the time being he is making his headquarters in Oklahoma City where an agency is being reestablished for the handling of business in that area.

Mid-Continent Supply Company Opens Two New Stores

Mid-Continent Supply Company, Fort Worth, Texas, has recently opened two new stores. At Seagraves, Gaines County, Texas, G. W. Walters is store manager, and at Monahans, Ward County, Texas, A. E. LeClaire is in charge. Both of these stores are under the supervision of R. C. Tucker, district manager at Odessa, Texas.

W. A. Scott Representing Lee C. Moore & Company

Lee C. Moore & Company, Pittsburgh, has appointed Walter Scott as machinery representative for the Mid-Continent with headquarters at Fort Worth, Texas. Scott is specializing on the sale of spudders, drilling units and well servicing equipment. He was formerly Texas representative of Star Drilling Machine Company and prior to that was eastern representative for International Derrick & Equipment Company.

S. W. Blount, Jr., Gets Western Pneumatic Control

S. W. Blount, Jr., has acquired controlling interest of the Western Pneumatic Company of San Antonio, manufacturer and distributor of Taylor flow valves. Al Sommers, Corpus Christi, recently has been made representative for the concern. S. D. and W. J. Jackson, Shreveport, Louisiana, are representatives in East Texas, Louisiana and Arkansas.

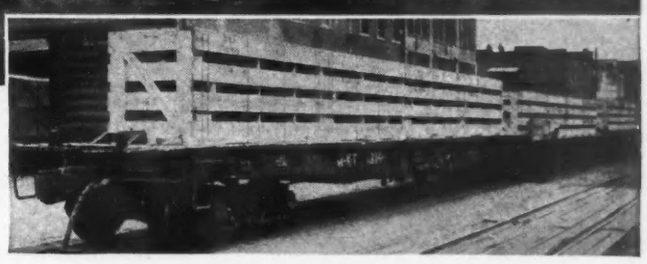
Big Export Shipment of Gaso Pumps to Venezuela

One of the largest single export shipments of oil field equipment that has recently been made from the Mid-Continent consisted of 12 Gaso Duplex Piston Power Pumps for pipe line service, shipped to one of the leading companies operating in Venezuela. Weight of the 12 big crates totaled 110,000 pounds, or 55 tons.

The pumps are known as Gaso Figure 1740. They are designed for gas engine drive and are capable of pumping 6000 barrels each, per day, at a pressure of 650 pounds. The pumps, from raw materials to finished product, were manufactured entirely in the Gaso Pump & Burner Manufacturing Company's Tulsa plant. The shipping boxes were also fabricated in the Gaso shipping department, which has had many years of experience in packing for the export trade.

Gaso Pump & Burner Manufacturing Company takes an interesting precaution in connection with all products shipped abroad. After the pump is completely assembled and tested, it is taken down and every part is treated with a special corrosion preventive, to guard against corrosion from possible exposure to salt water or salt sea air. The pump is then reassembled and packed for shipment.

JOHN MULCAHY
At Oklahoma City for The Cavins Company.



Shipment of 12 Gaso pipe line pumps starting for Venezuela.

Oscar A. Haas Manager at Tulsa for Allis-Chalmers Company

Oscar A. Haas, formerly connected with Allis-Chalmers Manufacturing Company's Tulsa district office, and recently chief engineer for Oklahoma Iron Works and International Supply Company, has rejoined the company as manager of that district, succeeding D. M. McCargar.

McCargar has been advanced to the general position of engineer, petroleum industry, with mailing address in care of the company's Tulsa office.

Axelson Plant Employees All Take Vacation at Once

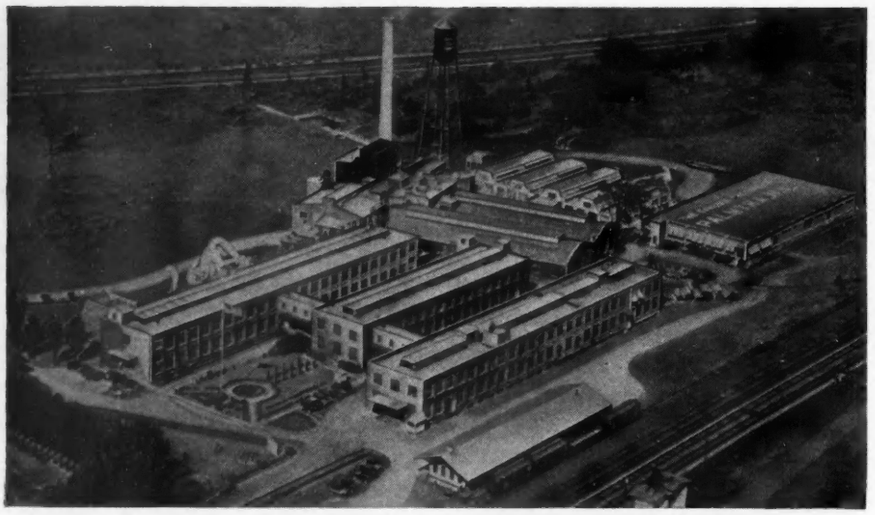
Employes of Axelson Manufacturing Company, Los Angeles, will all take their vacations at the same time this year, with the result that the plant will be shut down from July 4 to 10. A skeleton crew will, however, make shipments from stock items during this period. Field stores and warehouses will remain open as usual. General offices and branch offices will also be open.

It is pointed out that by giving everyone their vacation at the same time, less confusion results.

Garlock Packing Company Is 50 Years Old

This year is the Golden Anniversary of The Garlock Packing Company, for it was just 50 years ago that this company began the manufacture of mechanical packings at Palmyra, New York.

The village of Palmyra can rightly be called the cradle of the mechanical packing industry of America. It was here, shortly after the close of the Civil War, that one of the founders of The Garlock Packing Company conceived



Main factories of The Garlock Packing Company located at Palmyra, New York

the idea of making mechanical packings by cutting a ring from an old piece of rubber hose and putting it in a stuffing box of an engine used to furnish power to a saw mill. The experiment proved to be so successful that similar packing rings and washers were cut from a supply of the same material and sold to the different users of steam engines throughout the vicinity.

This was the beginning and nucleus of the mechanical packing business. In 1887 The Garlock Packing Company was founded and, with a handful of employes, started the first manufacture of mechanical packings on a commercial basis.

Today, after a half century of progress, the company has over 1000 employes, including a corps of representatives, who sell hundreds of products to 40,000 customers. The general offices and factories are located at Palmyra. Sales offices and warehouses are maintained throughout the country.

Branch factories are operated at Birmingham, Denver, and San Francisco. The Canadian factory is located at Hamilton, Ont., and sales offices and warehouses are maintained in six leading Canadian cities.

Sealed Power Corporation Names Tulsa Representative

The Sealed Power Corporation of Muskegon, Michigan, manufacturers of piston rings, announces the appointment of McGregor & Thilenius, 201 Midco Building, Tulsa, Oklahoma, as Oklahoma and Kansas representatives.

Texas Electric Steel Casting Company Employees Picnic

On June 19 Texas Electric Steel Casting Company gave a picnic for its employes and families at Kemah on Galveston Bay. Negro employes were also given a picnic at Greens Bayou, being transported there by bus.

Between 700 and 800 people attended. One thousand two hundred and fifty pounds of barbecue, with all the trimmings, was served.

Part of the crowd which attended the annual picnic of employees of Texas Electric Steel Castings Company

Inventors' Section to be Feature of Houston Show

Houston.—Oil-World Exposition has arranged for a display of new inventions and patented ideas at the oil show to be held in Houston, Texas, from October 11 to 16, inclusive. A section has been set aside for the showing of actual tools, working models, patterns and drawings. Anyone having a tool or invention relating to the oil industry is invited to be present and display his proposed designs. Space for them will be furnished without charge if the equipment shown has not been put on the market or manufactured by any manufacturing concern.

During the past years, the oil exposition at Houston has been instrumental in assisting numerous inventors, who have displayed their ideas, in making connections with various concerns to manufacture their new inventions; and at the same time it has helped the industry considerably by bringing out new products and new equipment.

The new patents and inventions committee, of which Lester B. Clark, patent attorney, is chairman, and E. G. Lenzner, assistant chairman, is arranging for an evening meeting where the inventors can present talks on patents. At this meeting some of those who have new tools that are ready for manufacture will be introduced and the operation of their inventions to meet practical conditions demonstrated.

WE KEEP the Grief out of your
PIPE LINE INVESTMENTS

Complete Mechanical Facilities for

CLEANING . . . COATING . . . WRAPPING

Line Pipe, either New or Used

Serving the entire Gulf Coast and Mid-Continent territory with a capacity of 10,000 feet daily, whether in our plant or in the field. New Mill Stocks are thoroughly cleaned of mill scale and all foreign matter before coating and wrapping is applied.

Our set-up permits you to watch us operate . . . to see what you're getting during the progress of the job.

»

"Dependable Underground Pipe Protection"

»

MAYES BROTHERS INCORPORATED

"Any Coating Specification"

PLANT: Wallisville Road and H. B. & T. Tracks
HOUSTON, TEXAS

Squeaks from the Bull Wheel

Double Edged

"What's the difference between a grass widow and a sod widow?"
"Just a lot of dirt."

Cautious

"Do you challenge any of the jury?"
"Well, I think I can lick that little guy on the end."

Hopeless

"Why do you always eat with your knife?"
"Because my fork leaks."

Home Girl

"Do you mean to say that sailor just sat there all evening with his arms folded?"
"Yes, but I was in 'em."

No Anatomist

"I hear your boy friend goes in for a lot of necking."
"Yea. But he's got funny ideas about just where my neck is!"

Proved

Judge: "You say this woman accosted you?"
Tony: "Yes, judga, she a costa me five dolla."

ENGINEERS WANTED

Sperry-Sun Well Surveying Company, Houston, Texas, has opening for two college graduate engineers, preferably mechanical, with one or two years production experience. Address written application in own hand writing giving information regarding education, past experience and present salary to 3118 Blodgett Avenue, Houston, Texas.

Trustful

Landlady—Of course, I must ask you for a deposit.
New Tenant (handing over required sum)—Certainly.
Landlady (beaming)—Thanks. And now, do you want a receipt, or shall we trust each other?

As Mickey Would Say It

The teacher was trying to impress upon her young pupils in the tenement district the importance of being original. She illustrated by saying: "Mickey, repeat these sentences in your own words: I see a cow. The cow is pretty. The cow can run'."
Mickey said: "Boy, lamp de cow. Ain't she a honey! An' I ask you, kin she take it on de lam?"

Counting the Cost

"Hae ye been oot wi' yon lassie again?"
"Aye, Dad. Why do ye look sae worrited?"
"I was just wondering how much the evening cost."
"No more than half a dollar, Dad."
"Aye, that was nae sae much."
"It was a' she had."

Smart Business

"Shine your shoes, Mister?"
"No time, Sonny."
"Well, to start the day right I'll do one for nothing."
"All right, go ahead."
"There, how does she look, Boss?"
"Fine."
"Well, for 10 cents I'll do the other one."

Typical

A clerk was retiring after completing 25 years of faithful service.
On his last day at the office his employer presented him with a large envelope and said:
"This is a token of my esteem."
The clerk opened it and found a portrait of his employer.
"What do you think of the gift?"
"It's just like you," came the cryptic reply.

Here's How to Say It

Just in case it is needed, here is a list of the foreign equivalents of "Here's how," to paste in your hat before leaving for the summer holiday abroad:
England—"Cheerio."
France—"A votre sante."
Germany and Austria—"Prosit."
The Scandinavian countries—"Skoll."
Holland—"Op Uw gezondheid."
Spain—"Salud."
Yugoslavia—"Na zravlje."
Italy—"Alla sua salute."
Russia—"Zvasha darovia."
Japan—"Banzai."
China—"Gombei."
Persia—"Salamati shemoh."

Time for Action

"I am grateful to you for the confidence you have reposed in me," orated the winning candidate.
"All right," said a voice in the rear, "but don't do any more reposing. Get busy."

NO Squeaks IN MILLER SAND PUMPS

Because the MILLER cleans out the sand in your wells, permitting free flowing of the oil—*the Sand Pump with the powerful suction action that is in worldwide use.*

Made in diameters of 2½, 3, 3½, 4, 4¼, 5, 5½, 7 and 9 inches and lengths of 20, 25 and 30 feet. 5/32-inch wall thickness in REGULAR Type, ¼-inch wall tubes HEAVY Type Sand Pumps.

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- **SAND BOTTOM** — Used when tools are run and when well is shot to quickly remove loose material.
- **STAR BOTTOM** — Used for cutting the sand loose.
- **CHISEL BOTTOM** (In Pump) — With this bottom tightly packed sand can be easily broken in small pieces so it can be picked up in the pump.

Write for Descriptive Folder and Price List

See Page 1186 COMPOSITE CATALOG

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